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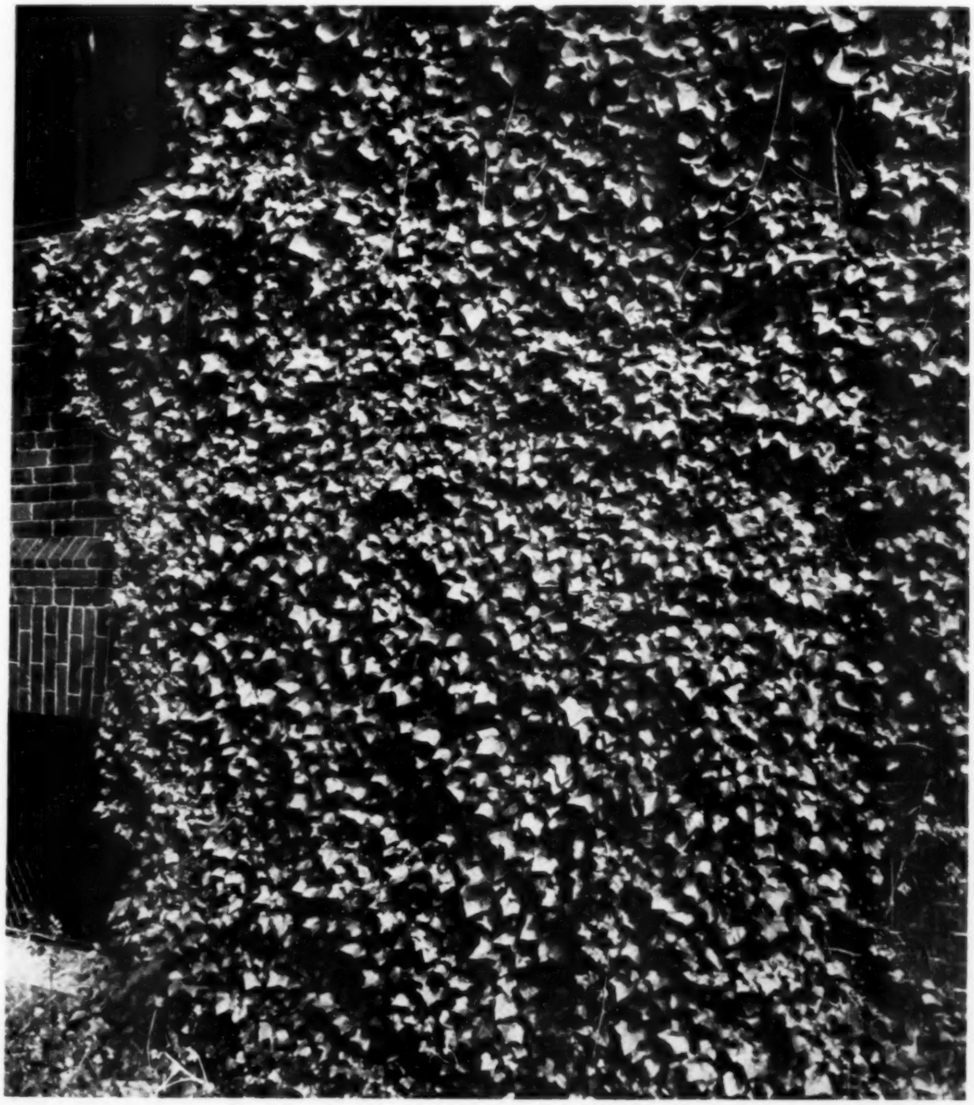
AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

JANUARY 15, 1951



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AMERICAN NURSERYMAN

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The Nurseryman's Forte: To Make America More Beautiful and Fruitful

VOL. XCIII, No. 2 — JANUARY 15, 1951

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CONTENTS

Ginkgo Biloba from Cuttings ... 7
By Henry Teuscher

Developing Disease Resistance in Trees ... 9
By A. J. Riker

Can Colleges Train Nurserymen? ... 18
By Harold H. Clegg

Plant Notes Here and There ... 20
By C. W. Wood

Editorial ... 6
—Tree Maintenance ... 6
—Replacing the Roses ... 6
—Send Booklet Ahead ... 6
—Overspend Incomes ... 6
—Home Building Drop ... 6

Weather Damages Stock ... 8
—RFC Making Loans to Texas Rose Growers ... 8
—Snow Damage in Ohio ... 8
—More Damage Reported in South and East ... 8

Winter Tree Planting Speeded with Ditcher ... 10
Determining Landscape Planting Costs ... 10

Pointers on Propagation ... 12
—Grafting in the Coldframe ... 12

Tree Maintenance ... 13
—Introduction ... 13
—What's New in Oak Wilt? ... 13
—Ice Injury to Trees ... 13

Noel B. Wysong (Portrait) ... 13

Coming Events ... 24
—Meeting Calendar ... 24
—Washington Dates ... 24
—Michigan Convention ... 24
—Virginia Speakers to Stress "Plant America" ... 26
—Kentucky's 25th ... 28
—Tennessee Program ... 28
—Oregon Program ... 30
—Midwest Shade Tree Conference Program ... 31
—Florida Camellia Show ... 32
—Spring Flower Shows ... 33
—Washington Bulb Course ... 34

New York Course in Nursery Management ... 34
U. S. Plant Exports ... 35
Worcester County Landscapers United ... 36
Connecticut Award ... 37

New Appointments ... 37
Maryland Adds Landscape Specialist ... 37
Saginaw Valley Party ... 38
No-Wilt Merger ... 38
U. S. Forbids Hoarding ... 39
Aid Mobilization ... 39

This Business of Ours ... 40
—What Makes the Color in Flowers? ... 40
—Uncommon Berries ... 40

New Plant Patents ... 42
Propagation of Dwarf Fruit Trees ... 44
Albuquerque Activities ... 47
New Orleans Meeting ... 48
Southwestern News ... 48
Southern Seed Officers ... 49

New Books and Bulletins ... 50
—Garden Structures ... 50
—Landscape Sketching ... 50
—Natural History of Trees ... 50
—Sudworth's Forest Trees ... 50
—Forest Measurement ... 51
—Plant Physiology Review ... 51
—Bulletins Received ... 52
—Wage-hour Bulletin ... 54

Cover Illustration ... 55
—Hedera Helix Baltica ... 55

Business Longevity ... 61
X-ray Flower Pictures ... 63
London Roof Garden ... 64

INDEX TO ADVERTISERS

Adair Co., Charles 70
Alanwold Nursery 34
American Bulb Co. 49
American Florist Supply Co. 74
Andrews Nursery Co. 39
Anthony & Co. 69
Appalachian Nurseries 66
Arp Nursery Co. 29
Arterburn Nursery, Paul 42
Atkin's Sons, L. 74
Ayer-Line Industries, Inc. 52

Bagatelle Nursery 35
Bailey Nurseries, J. V. 41
Bartlett Mfg. Co. 70
Bennington's Nursery Gardens 41
Berryhill Nursery Co. 68
Beseler, Herman F. 68
Bird & Son, Inc. 23
Blackmoor Estate 48
Blackwell Nurseries 44
Bobbink & Atkins 38
Bond Equipment Co. 63
Boulevard Nurseries 27-65
Boxwood Gardens 44
Boyd Nursery Co. 41
Brimfield Gardens Nursery 24
Brinkman Bros., Ltd. 48
Broadway Machine & Mfg. Co. 72
Brookfield Gardens 16-24
Brookville Nurseries 14
Brouwer's Nurseries 34
Brown & Son, Inc., A. J. 19
Brown Deer Nurseries 37
Brownell Roses 32
Bryant's Nurseries 41
Bulk's Nurseries 24
Buntings' Nurseries, Inc. 47
Burr & Co., Inc., C. R. 36
Burton's Hilltop Nurseries 41

California Nursery Co. 49
Carpenter & Co., Geo. B. 66
Champion Sprayer Co. 73
Chase Co., Benjamin 70
Chase Nursery Co. 44
Clark Nursery, Arnold C. 42
Classified Ads 56-57-58-59-60
Clearfield Bituminous Coal Corp. 33
Cloverset Flower Farm 25
Cole Nursery Co. 39
Columbia & Okanogan Nursery Co. 55
Commercial Nur. Co. 42
Congdon Nursery, Ivan R. 38-48
Conigisky, B. F. 65
Cooperative Rose Growers 44-45
Crystal Soap & Chemical Co. 60
Cumberland Plateau Nursery 42
Curtis Nurseries 34

Dayton Fruit Tree Label 74
Deerfield Nurseries 15
Del-Mar-Va Nurseries 14
Del Rancho Fortuna 55
Doerfler & Sons Nursery, F. A. 53
Domestic Peat Moss Co. 64
Doty & Doerner, Inc. 55
Dow Chemical Co. 73

Eagle Creek Nursery Co. 40
Eastern Shore Nurseries, Inc. 14
Esham's Nurseries 15
Evergreen Nursery Co. 41

Fairview Evergreen Nurseries 30
Farm Landscape Co. 49
Felins Tying Machine Co. 65
Felix & Dykhuis 48
Forest Nursery Co. 37
Foster Nursery Co., Inc. 46
Fraser Nursery, Samuel 24
Fricke Co., J. E. 72

Garden Shop, Inc. 70
Gardner's Nurseries 75
Geiger Co., E. C. 72
General Package Corp. 65
George & Son, James I. 35
Gresham's Nursery 35
Grootendorst & Sons, F. J. 48
Gro-Quick 49
Growers Exchange, Inc. 43

Half Moon Mfg. & Trading Co. 62
Hallauer, N. A. 24
Hallum Nursery Co., H. G. 42
Halpern Bros. 72
Heasley's Nurseries 32
Henderson & Co., Peter 49
Henry Nurseries 39
Herbst Bros. 1
Hess' Nurseries 29
Hill's Nursery 62
Hill Nursery Co., D. 76
Hillenmeyer Nurseries 37
Hobbs & Sons, Inc. 39
Hoffco, Inc. 66
Holland Transplanter Co. 67
Hoogendoorn, C. 33
Horsford, William Crosby 34
Horticultural Book Service 68-74
Howard Rose Co. 52
Humphreys Landscape Service 42

Ilgenfritz Nurseries, Inc. 41

Jewell Nurseries, Inc. 26
Johnston, Wm. A. 60

Kalamazoo Paraffine Co. 62
Kallay Bros. Co. 41
Keeler's Gardens 46
Kelly Bros. Nurseries, Inc. 45
Koster Nursery 35
Krieger's Wholesale Nursery 35
Kuemmerling, Inc., Karl 74

LaBars' Rhododendron Nursery 36
Lake's Shenandoah Nurseries 40
Lansing Specialties Mfg. Co. 72
Leeland Farms 49
Leghorn's Evergreen Nurs. 34
Leonard & Son, A. M. 74
Lindig Mfg. Co. 71
Lindley Nurseries 30
Loding Nursery & Equipment Co. 73
Loewith, Inc., Julius 72
Lovett, Lester 35

Maloney Bros. Nursery Co., Inc. 47
Mathews Co. 73
Matthews' Nursery 41
McGill & Son, A. 55
McIninch Greenhouses 38
Meehan Co., Thomas 39-68
Mennes Nurseries, Menno S. 68
Michigan Fruit Growers Nur. 40
Milton Nursery Co. 55
Mitsch Nursery 55
Monarch Shingle Co. 54
Monrovia Nursery Co. 51
Montebello Rose Co. 54
Moran, E. C. 49
Mount Arbor Nurseries 2
Mount Hood Nursery 53
Mount Vernon Nursery 50
Musser Forests, Inc. 36

National Landscape Institute 60
Natorp Co., W. A. 40
Naugher Nursery Co. 44
Neosho Nurseries Co. 46
New Amsterdam Import Co. 67
Newport Nursery Co. 41
New Yorker Bag & Burlap Co. 73
Nurserymen's Exchange 52
Nu Way Plant Food Co. 72

Offenberg Nurseries, Paul 38
Ohio Nursery Label Co. 62
Onarga Nursery Co., Inc. 43
Overlook Nurseries, Inc. 44
Owen & Son, Inc., T. G. 27

Pacific Coast Nursery 50
Pacific Northwest Rose Nursery 54
Pallack Bros. Nurseries 36
Paschke Garden Tool Mfg. Co. 64
Paw Paw Plant Co. 45
Payne Dahlia Farms 40
Peekskill Nursery 15
Perry Nursery Co., O. H. 43
Peterson & Dering 50
Plant Marvel Laboratories 64
Pontiac Nursery Co. 46
Portland Wholesale Nursery 55-74
Premier Peat Moss Corp. 71
Premier Southern Ticket 74
Presto Mfg. Co. 66
Princeton Nurseries 32
Propulsion Engine Corp. 21

Rambo's Whlse. Nurseries, L. J. 46
Ramsey Co., L. W. 63
Ra-Pid-Gro Corp. 28
Ravensberg, Maurice C. 48
Reimers, Ben 31
Reynolds, Harry H. 53
Rhode Island Nurseries 14
Rich & Sons Nursery 54
Richardson & Co., H. D. 46
Rider Nurseries 45
Roberts Nursery Co. 47
Robinson, E. D. 14-15
Rollers Nursery 45
Roper Mfg. Co. 69
Roto-Hoe & Sprayer Co. 69
Rough Bros. 72

Salem Tool Co. 63
Scarff's Sons, W. N. 46
Schroth's Nursery 20
Semmes Nurseries 44
Shepard Nurseries 32
Sherman Nursery Co. 41
Sherwood Nursery Co. 50
Siebenthaler Co. 40-41-73
Sizemore, Charles 60
Slingerland & Son, J. H. 43
Smirnow, Louis 18
Smith & Son, Seymour 74
Smith Corp., W.-T. 32
Sneed Nursery Co. 45
Snyder Mfg. Co. 62
Soilaire Industries 17
Somerset Rose Nursery 38
Southern Nursery & Landscape Co. 42
Stassen Floral Gardens 34
Stedman Nurseries 15
Stribling's Nurseries 54
Stuart & Co., C. W. 29
Sudbury Soil Testing Laboratory 72
Summit Nurseries 46
Suncrest Evergreen Nurseries 38
Sunny Ridge Nursery 38
S-W Supply Co. 73
Swift & Co. 33

Tankard Nurseries 18
Taylor & Sons, L. R. 47
Tingle Printing Co. 66

Universal Mfg. Co. 70

Vanderbrook Nurseries 5
Van Herreweghe, William 48
Van Hof Nurseries 46
Vennard's Nursery 43
Verhalen Nursery Co. 45
Verkade's Nurseries 33
Vuyk Van Ness Nurseries 48

Want Ads 61
Waynesboro Nurseries 36
Wayside Gardens Co. 43
Weeks Whlse. Rose Grower 53
Weller Nurseries Co., Inc. 43
Wentzell's Nursery 32
Westminster Nurseries 35
Whiterock Nurseries 45
Whitney Seed Co., Inc. 49
Wight Nurseries 44
Williams & Harvey Nurseries 62
Williams, Isaac Langley 24
Willis Nursery Co. 22
Wirth, Hermann A. 70
Wonderland Nurseries 40
W-W Grinder Corp. 65

Zanetti Co., Joseph 52

Forms for the February 1 issue will close Monday, January 22.

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460	**Taxus Cuspidata,** 18 to 24 ins.	2.50
265	**Taxus Cuspidata,** 15 to 18 ins.	2.00
800	**Taxus Cuspidata Media,** 15 to 18 ins.	$2.00
900	**Taxus Cuspidata,** Upright Columnar, 18 ins.	2.00
263	**Taxus Hicksi,** 12 to 15 ins.	2.00
490	**Taxus Media Hatfield,** 18 ins.	2.25
55	**Taxus Media Hatfield,** 12 to 18 ins.	2.00
175	**Tsuga Canadensis** (Canadian Hemlock), 12 to 18 ins.	2.00

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		Each
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20	**Paul's Scarlet Thorn,** 5 to 6 ft.	2.75

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		Each
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10	**Akebia Quinata,** No. 1	.35
15	**Akebia Quinata,** No. 2	.30
184	**Almond, Pink,** 3 to 4 ft.	.60
450	**Almond, Pink,** 2 to 3 ft.	.45
247	**Almond, Pink,** 18 to 24 ins.	.30
600	**Almond, Pink,** 12 to 18 ins.	.25
15	**Ampelopsis Engelmanni,** No. 1	.25
7	**Ampelopsis Engelmanni,** No. 2	.15
320	**Ampelopsis Quinquefolia,** No. 1	.25
70	**Ampelopsis Quinquefolia,** No. 2	.15
25	**Aralia Pentaphylla,** 12 to 18 ins.	.12
58	**Aristolochia Sipho,** No. 2	.40
40	**Berberis Thunbergi,** 3-yr., green, 12 to 18 ins.	.15
525	**Berberis Thunbergi,** 3-yr., green, 9 to 12 ins.	.10
5	**Calycanthus Floridus,** 2 to 3 ft.	.40
8	**Calycanthus Floridus,** 18 to 24 ins.	.35
58	**Clethra Alnifolia,** 2 to 3 ft.	.35
78	**Clethra Alnifolia,** 18 to 24 ins.	.30
44	**Clethra Alnifolia,** 12 to 18 ins.	.25
7	**Cornus Lutea,** 2 to 3 ft.	.20
7	**Cornus Sibirica,** 2 to 3 ft.	.20
27	**Cydonia Japonica,** 2 to 3 ft.	.50
324	**Cydonia Japonica,** 18 to 24 ins.	.35
620	**Cydonia Japonica,** 12 to 18 ins.	.20
65	**Deutzia P. of R.,** 3 to 4 ft.	.35
14	**Deutzia P. of R.,** 18 to 24 ins.	.20
40	**Exochorda Grandiflora,** 3 to 4 ft.	.35
9	**Euonymus Alatus Comp.,** 12 to 18 ins.	.75
20	**Forsythia Fortunei,** 3 to 4 ft.	.35
73	**Forsythia Fortunei,** 18 to 24 ins.	.25
38	**Forsythia Fortunei,** 12 to 18 ins.	.20
12	**Forsythia Spectabilis,** 2 to 3 ft.	.30
700	**Forsythia Spectabilis,** 18 to 24 ins.	.20
250	**Forsythia Spectabilis,** 12 to 18 ins.	.15
210	**Forsythia Suspensa,** 3 to 4 ft.	.35
260	**Forsythia Suspensa,** 2 to 3 ft.	.25
110	**Forsythia Suspensa,** 18 to 24 ins.	.20
25	**Forsythia Suspensa,** 12 to 18 ins.	.15
18	**Forsythia Viridissima,** 3 to 4 ft.	.30
20	**Forsythia Viridissima,** 2 to 3 ft.	.25
20	**Forsythia Viridissima,** 18 to 24 ins.	.20
8	**Forsythia Viridissima,** 12 to 18 ins.	.15
20	**Hydrangea A.G.,** 3 to 4 ft.	.40
1760	**Hydrangea A.G.,** 2 to 3 ft.	.35
1105	**Hydrangea A.G.,** 18 to 24 ins.	.30
1250	**Hydrangea A.G.,** 12 to 18 is.	.25
325	**Hydrangea P.G.,** 3 to 4 ft.	.50
2920	**Hydrangea P.G.,** 2 to 3 ft.	.45
1960	**Hydrangea P.G.,** 18 to 24 ins.	.35
450	**Hydrangea P.G.,** 12 to 18 ins.	.25
20	**Kerria Japonica,** 2 to 3 ft.	.50
34	**Kerria Japonica,** 18 to 24 ins.	.40
170	**Kolkwitzia Amabilis,** 12 to 18 ins.	$0.40
390	**Ligustrum Amurense,** 3 to 4 ft.	.18
1170	**Ligustrum Amurense,** 2 to 3 ft.	.14
427	**Ligustrum California,** 3 to 4 ft.	.10
570	**Ligustrum California,** 2 to 3 ft.	.08½
710	**Ligustrum Ibolium,** 3 to 4 ft.	.12½
354	**Ligustrum Ibolium,** 2 to 3 ft.	.10
250	**Lonicera Heckrotti,** No. 1	.50
60	**Lonicera Heckrotti,** No. 2	.40
10	**Lonicera Tatarica Alba,** 2 to 3 ft.	.25
23	**Lonicera Tatarica Red,** 3 to 4 ft.	.35
40	**Lonicera Zabeli,** 2 to 3 ft.	.45
99	**Lonicera Zabeli,** 18 to 24 ins.	.40
949	**Philadelphus Virginalis,** 3 to 4 ft.	.55
1762	**Philadelphus Virginalis,** 2 to 3 ft.	.45
3310	**Philadelphus Virginalis,** 18 to 24 ins.	.35
3250	**Philadelphus Virginalis,** 12 to 18 ins.	.30
20	**Rhus Cotinus,** 18 to 24 ins.	.30
55	**Rhus Cotinus,** 12 to 18 ins.	.25
20	**Rosa Rugosa,** 12 to 18 ins.	.25
38	**Sambucus Aurea,** 18 to 24 ins.	.15
25	**Sambucus Aurea,** 12 to 18 ins.	.10
18	**Spiraea Anthony Waterer,** 18 to 24 ins.	.35
8	**Spiraea Anthony Waterer,** 12 to 18 ins.	.30
9	**Spiraea Anthony Waterer,** 9 to 12 ins.	.25
846	**Spiraea Froebeli,** 18 to 24 ins.	.25
325	**Spiraea Froebeli,** 12 to 18 ins.	.20
20	**Spiraea Trichocarpa,** 3 to 4 ft.	.30
55	**Spiraea Trichocarpa,** 2 to 3 ft.	.25
56	**Spiraea Trichocarpa,** 18 to 24 ins.	.20
126	**Spiraea Vanhouttei,** 2 to 3 ft.	.30
80	**Spiraea Vanhouttei,** 18 to 24 ins.	.25
40	**Spiraea Vanhouttei,** 12 to 18 ins.	.20
26	**Stephanandra Flexuosa,** 2 to 3 ft.	.25
30	**Stephanandra Flexuosa,** 12 to 18 ins.	.15
40	**Symphoricarpos Racemosus,** 2 to 3 ft.	.35
14	**Symphoricarpos Racemosus,** 18 to 24 ins.	.30
140	**Symphoricarpos Vulgaris,** 3 to 4 ft.	.30
56	**Symphoricarpos Vulgaris,** 2 to 3 ft.	.25
80	**Symphoricarpos Vulgaris,** 18 to 24 ins.	.20
125	**Syringa Vulgaris,** 9 to 12 ins.	.20
85	**Tamarix Amurense,** 3 to 4 ft.	.30
94	**Tamarix Amurense,** 18 to 24 ins.	.20
48	**Tamarix Amurense,** 12 to 18 ins.	.15
25	**Viburnum Americanum,** 9 to 12 ins.	.15
14	**Viburnum Dentatum,** 18 to 24 ins.	.20
5	**Viburnum Dentatum,** 12 to 18 ins.	.15
46	**Viburnum Opulus,** 9 to 12 ins.	.20
368	**Weigela Rosea,** 3 to 4 ft.	.45
115	**Weigela Rosea** 2 to 3 ft.	.35
160	**Weigela Rosea,** 18 to 24 ins.	.30
50	**Weigela Rosea,** 12 to 18 ins.	.25

AMERICAN NURSERYMAN

F. R. KILNER, *Editor and Publisher*
Joan L. Kilner, *Assistant Editor*

Editorial

TREE MAINTENANCE.

As costs increase, particularly that of labor, the figures that express the value of a full-grown specimen shade tree on the homeowner's lawn or parkway necessarily mount much higher. It follows that, more than ever, the homeowner is well repaid for the expense of fertilizing, spraying, pruning and otherwise caring for his mature trees. As the public generally appreciates that fact, the work of the commercial arborist becomes more important to the community from year to year. The occupation is one of real responsibility, and it has a manifest opportunity before it.

To aid the many commercial arborists who subscribe to the American Nurseryman, as well as the nurserymen who do tree work, articles relating to their operations have appeared from time to time, and, of course, many of the more general articles are useful to them. With this issue begins a special page for the arborists, conducted by a man long recognized as one of those best informed in regard to trees and their care. In this department, topics of current importance can be discussed, and questions of readers with regard to tree maintenance can be given timely response. Readers' queries and suggestions will be welcomed by the writer of that page, as they are always by the editors.

Relevantly, the point might be emphasized that the public needs far more education than it is receiving on the value of trees and the necessity of preventive measures to keep them in good health. Though the homeowner is likely to go to his physician for a periodic checkup, he waits until his trees are defoliated or limbs are broken before he calls in the arborist. Only after loss is he likely to realize the value of spraying and pruning beforehand. He sees little need of cabling and bracing in summer and must be given the picture of perils from winter storms.

Many communities are awakening to the need of regular care of their shade trees. Individual arborists need to be not only well trained, but well informed in order to educate the public to full appreciation of the importance of their work.

The Mirror of the Trade

REPLACING THE ROSES.

Not until spring comes, and the public and retail nurserymen are clamoring for roses that cannot be delivered, will there be full appreciation of the tremendous loss sustained in east Texas because of the freezing weather in November. Not many roses had been dug from the fields, because of the continued warm weather, and the condition of the plants was such that the severe freeze killed many outright and damaged others. While the extent of the injury varied according to the type of roses, the field location and the condition of the plants, the result was the loss of so much of the crop that rose plants will be more than short in supply by spring.

The retail nurseryman can begin now to prepare answers for his prospective rose customers. Some will have laid plans for their beds or borders, awaiting plants to fill the space. According to his locality, the nurseryman should study possible recommendations he can make in the way of flowering shrubs or herbaceous perennials which might be sold to occupy those areas. The list may not be too long, but if sufficient study and ingenuity are put on the matter, the retail nurseryman should come up with answers which will maintain his sales volume as well as avoid disappointment to some of his good customers.

SEND BOOKLET AHEAD.

Many mail-order nursery firms accompany shipments with a booklet or card of instructions as to planting and care of the stock by the recipient. If these instructions were followed, there would be more satisfaction on the part of the purchasers and certainly fewer claims for losses.

But if the shipment arrives when spring is advanced and the customer is busy, little or no time is given to reading the instructions.

One nurseryman suggests that the booklet be sent in advance, with an acknowledgment of the order. Then the customer would know that his plants were on the way, and, by reading the instructions beforehand, he would do a better job in planting. The extra expense of sending the booklet in advance might well repay the mail-order nurseryman in giving greater satisfaction to his customers.

OVERSPEND INCOMES.

More than one-third of the nation's families overspent their incomes last year, according to a report on consumer finances released last month by the Federal Reserve Board. Such being the case, probably there was good reason for the board's placing restrictions on consumer credit recently.

The report set net saving by all families at nine billion dollars in 1949 against eleven billion dollars in 1948. Thirty-four per cent of the nation's families lived beyond their incomes last year for good reason, pointed out the report, because in 1949 consumer incomes were declining, whereas they have been rising this year and are now at a record high.

The report revealed that families who rank in the top tenth in income accumulated considerably more in savings last year than all the other families put together.

Those who lived beyond their incomes—a group concentrated heavily in the lower income brackets—managed to do so chiefly by getting credit, stated the report.

Farm families accounted for only about seven per cent of total savings last year, against eighteen per cent in 1948.

Over-all savings by American families have shown a steady drift downward in the postwar years, according to the report. Our observation is that such a course would result from the wish to combat inflation.

HOME BUILDING DROP.

A drop in home building amounting to twenty-five per cent was forecast for 1951 at the recent convention of the United States Savings & Loan League. The league estimated 900,000 new dwellings would be started this year, as contrasted with 1,300,000 during 1950. However, some pessimistic estimates of 600,000 to 700,000 have been made.

Completion of the larger figure begun in 1950 will give nurserymen an excellent volume business for the year ahead.

NEW address but same location for Ward's Flower Ranch is 2744 East Grand River, East Lansing, Mich. Former address was Route 2, Box 193, Lansing.

Ginkgo Biloba from Cuttings

By Henry Teuscher, Curator, Montreal Botanical Garden

As everyone knows, Ginkgo biloba is a handsome tree, subject neither to diseases nor to windbreak, reliably hardy in most parts of the country, long-lived and tolerant to city conditions. It would be a first-class street tree if one could make sure of obtaining only male and no female trees. The latter have rather large, plumlike, vile-smelling fruits which not only make sidewalks slippery and dangerous, but even cause poison-ivy-like, extremely unpleasant skin eruptions on allergic persons who have come into contact with their juice. The planting of female ginkgo trees on city streets, therefore, is sure to lead not only to public complaints, but even to a multitude of damage suits. Even if he does not hurt himself, anyone who slips on the stinking fruits would be entitled to remuneration for damage to his clothing, because the extremely disagreeable smell is so persistent.

Since it is only the fruits which are objectionable while the sexes are separated on different trees, the male tree is as desirable as the female tree is undesirable, but, unfortunately, there is as yet no way of recognizing the sex of an immature tree. On the other hand, Ginkgo biloba seedlings, which produce a strong taproot, can be transplanted safely only so long as they are young, preferably when about five to eight feet high, while they are not known to flower and therewith show their sex before they are at least 20 to 30 years old. Vegetative propagation of a tree known to be a male, therefore, offers the only means of providing young tres of known male sex.

Curiously enough, there appears to be little literature on this subject, and the only indication I could find readily was in Bailey's "Nursery Manual" which, under the subject of ginkgo, contains the following hint: "Also increased by layers and by cuttings of either green or ripe wood." No details were given. Layering is not interesting, since this, of course, can be practiced only on young plants, the sex of which is unknown. If propagation by cuttings were as simple and sure as Bailey's short phrase seems to imply, it certainly is strange that this method, which would readily permit the growing of guaranteed male plants, does not appear to have been practiced to any extent. Apparently, those who tried it obtained such poor rooting that the method was discarded as commercially impracticable.

Therefore, we decided to experiment and, to our own surprise, were so successful with the first trial that our procedure seems worth reporting.

One of our young ginkgo trees had been accidentally broken last fall and had been pruned back, with the result that each of the cut branches had produced a number of young shoots. By the time we looked at it, at the end of June, these shoots were already about ten inches long, still soft at the tips but commencing to harden toward their base. We cut off a number of these shoots as close to the base as we could manage, without cutting into the old branch. The soft tips were cut off, which left the cuttings about five to six inches long. The bottom parts were dusted with the hormone powder Auxan, and the cuttings were inserted about three inches deep into a mixture of two-thirds sharp sand and one-third peat moss in a coldframe without bottom heat. The soft tips were treated in the same manner, but all of them perished without rooting. The bottom-end cuttings, however, rooted 100 per cent within less than three weeks. The most interesting part was that hardly any callous formation took place, with all of the roots emerging only from the thickened base which is so typical for a ginkgo twig.

It is quite evident from this result that it is vitally important to take along all of the thickened base of the young shoot when ginkgo cuttings are gathered. It is equally important, by the way, to leave a fair amount of leaves on the cuttings, because their removal would inhibit the root-promoting action of the Auxan.

Two months after insertion the cuttings were potted, at which time each had a mass of healthy roots. No belated top growth took place, and the young plants now are ready to be planted out next spring.

To be sure, this was a rather haphazard experiment without differently treated checks and without follow-up later on in the season. We had merely expected to gain some hints as to the most promising procedure. But the results were so spectacular and so early apparent that we saw no reason for carrying the experiment any further. I believe that the picture is quite clear. It is true, of course, that we do not know as yet how cuttings behave which are taken at a later date. But the chances are that most of those who have tried this method of ginkgo propagation have taken the cuttings much later than we did (at the end of June) and have been disappointed with their results, which may have been the reason why this method never became popular. It can be expected, of course, that rooting percentages drop and that rooting will take much longer, the harder the cutting becomes. The amazingly fast rooting which we obtained is probably possible only with the half-hard cuttings we used, provided that the soft tips are removed.

The fact that we applied no bottom heat may be significant also. Besides, the possibility of obtaining 100 per cent very fast rooting in a simple coldframe renders this method extraordinarily cheap for the commercial grower. It may not even be necessary to pot up the rooted cuttings. If the cuttings are not inserted too close together, they can probably be left in the coldframe until the following spring and then be planted out right away into the nursery. Whether cutting-grown plants will be less inclined to produce a taproot, which is well possible, and will, therefore, be easier to transplant, has yet to be seen, but this may well be an additional boon to be gained.

As yet we do not know whether the fact that the parent tree from which our cuttings were taken was only 10 years old (from seed) was responsible for the ease with which these cuttings rooted, or whether the age of the tree has some influence. However, since ginkgo trees grow to be several hundred years old (one famous old tree in Japan is believed to be over 1,000 years old), a 25 to 30-year-old tree of flowering age should still be youthful enough to produce vigorous cuttings which can be rooted. Pruning some of its branches should induce the tree to produce a multitude of suitable young shoots.

We shall continue our experiments with cuttings from older trees, and if these prove as successful as our first trial, I no longer can see any reason why guaranteed male trees cannot be raised in quantity. This should finally gain for the ginkgo the place of prominence it deserves, as one of the finest street trees.

Weather Damages Stock

RFC MAKING LOANS TO TEXAS ROSE GROWERS.

East Texas was declared a disaster area by Congressional action after two hard November freezes caused heavy losses for rose growers there. Joe H. Brown, of Dallas, opened a branch office of the Reconstruction Finance Corporation at Tyler, December 26, for the purpose of making loans to rose growers and other nursery farmers whose crops were damaged by the freezes.

Loans would be made only to persons who had suffered losses, stated Mr. Brown. The loans are made specifically to keep the borrowers in business. No loans can be made by RFC to persons wishing to go into the rose-growing business, he explained.

The size of individual loans will be based upon the amount of crop loss, said the examiner. Money will be loaned at three per cent interest, with payment time to be determined by circumstances in the particular case. No interest is charged for the first four months.

Loans up to $20,000 can be made locally upon approval of a local committee to be appointed by RFC. Larger loans must have the approval of the Washington office of RFC. The government organization is prepared to make loans which banks could not ordinarily handle, and the program has the support of the Tyler banks.

The East Texas Agricultural Council, headed by Cy Heaton, assumed leadership in helping the RFC examiner set up his office at Tyler. A report on the rose situation there, sponsored by the East Texas Agricultural Council, was largely responsible for Congressional action declaring east Texas a disaster area. The report, written by Sam Whitlow, was made with the cooperation of Tyler nurserymen, Tyler bankers and the American Association of Nurserymen.

The report estimated over-all loss to nursery farmers in the area to ninety per cent of the 1950-51 crop, resulting in an estimated loss to growers of around $6,000,000. It is said that about 300 farmers, 3,000 to 4,000 permanent employees and 12,000 to 15,000 part-time employees were directly affected by the crop loss, not counting the members of their families.

The report made no attempt to place a money value on the loss, but stated that the average gross value of nursery stock to the farmer is approximately $3,000 an acre. On this basis was computed the aggregate loss of $6,000,000 to the growers alone. Loss in potential profits to distributors and others would be equally great.

SNOW DAMAGE IN OHIO.

The mounting toll of damage to nursery crops in Ohio, particularly in the Lake county area, caused by the recent heavy snows, blizzards and sudden thaws that befell the entire midwest, already has been estimated at from $500,000 to $1,000,000 by Ohio nurserymen.

Storm Damage in Ohio Nursery.

But Stephen Allen, Jr., of Allen Nurseries & Seed House, Geneva, president of the Lake County Nurserymen's Association, said most growers will not be able to complete loss estimates for a while, but that the total damage "certainly would be very high."

Nurserymen pointed out that the storm damage would have far-reaching effects, preventing shipment of a large percentage of the crops earmarked for sale in spring. It is believed that it will take as long as two years for some of the plants to regain their prestorm growth.

The adverse weather, which began on the week-end following Thanksgiving day, resulted in a snowfall two to three feet deep in Lake county, and in many places from three to six feet deep. Sunday, November 26, the temperature rose, and rain fell for two or three hours in the snowbound areas. Another change in the weather turned the moisture to ice on the trees, causing them to bend low. When more heavy wet snow fell on the following day, the damage resulted which is apparent in the row of cutleaf weeping birches in the accompanying reproduction of a snapshot taken at the Champion Nurseries, Perry, O., where many other items also were severely damaged, according to C. R. Champion. He also estimates that less than ten per cent of the arborvitaes in the nursery are salable. Flowering crabs and almonds and many of the flowering shrubs were likewise badly injured.

Further indication of the heavy losses in the various areas, as reported from Wooster, Cleveland, Sidney and Willoughby, was evident in the facts that thousands of evergreen trees were extensively damaged and that several varieties of other plants, including rhododendrons and rosebushes, were almost completely destroyed. Many nursery fields also were under water for various periods of time, indicating still greater damage.

Robert Kallay, of the Donewell Nursery, Painesville, explained that the weight of the snow stripped the branches from many trees and bushes and that a large number of holly plants broke off at the ground. A report that much of his land was under water was given by Paul Kallay, of Kallay Bros. Co., Painesville, while H. J. Wilson, of Mentor Heights Nursery, Painesville, stated the majority of the 2,000 hemlock trees on his land were badly damaged. Paul R. Bosley, Bosley Nursery, Mentor, commented on the avalanche of inquiries from homeowners worried about damage to trees and shrubs on their properties.

MORE DAMAGE REPORTED FROM SOUTH AND EAST.

The far-reaching snowstorms brought similar disaster to nursery crops farther south. In the Chattanooga, Tenn., area plants that are usually ready for cold weather in that latitude by January were caught "with their sap up." Cold weather struck with blizzard swiftness the day after Thanksgiving, freezing much vegetation before it had time to harden off.

Plant damage may be the worst he has seen in the thirty years he has been in the nursery business, said Charles Morse, of Morse Bros., Chattanooga, Tenn., one of the largest growers in the area. No one inter-

[Concluded on page 74.]

Developing Disease Resistance in Trees

By *A. J. Riker*

Before discussing the details of procedure for developing trees resistant to disease, perhaps we should consider some of the basic viewpoints behind them.

The fundamental influences of environment and heredity act on trees as on all other living things. Our shade trees, for the most part, are forest trees that have been domesticated; so the real problems are similar both for parks and woods.

Greater changes occur in the environment, however, when trees are planted in parks, about houses and along streets. Even in the forests critical changes have come about because of cutting by the woodsman's saw, the sweep of fire and killing both by insects and diseases. Thus, conditions are quite different now from what they were for our virgin forests.

The primary objectives of breeding studies are to find the best kinds and types of trees for growing in particular locations under present-day conditions. In the city this often means turning unsightly land into a beautiful landscape. In the forest special importance appears with respect to land that is not suitable for other types of agriculture. If trees can be grown, they will provide both economic and aesthetic benefits by giving a worthy destiny to such land.

Three objections have sometimes been raised to this kind of work; namely, (1) it rivals silviculture, (2) the time necessary to accomplish anything is too long and (3) it is expensive. Let us consider these briefly and in order.

Instead of rivaling silviculture, work on the improvement of trees is an adjunct to it and supplements it. The procedure of cutting the best trees leaves only the less desirable ones to provide seeds. This leads toward degeneration. The important things now are (1) to make selections of the best germ plasm that nature has provided, (2) to preserve it in suitable plantings and (3) to improve it by applying the available modern techniques, as considered later.

The time does seem long if one plans on a complex breeding program like that used with corn and if one thinks he must wait twenty years between generations. Fortunately, a number of short cuts are available. Among these the most important is vegetative propagation. Thus, outstanding trees which nature has already provided and which have proved their ability to do well in their own locality can be multiplied. We shall consider some examples of this later on. If actual cross-pollination should be desirable, modern techniques have made it possible to graft scions from seedling trees in the tops of "flowering" trees and thus to induce seed production in a relatively few years. In any case, for necessary things that take a long time, one must start as soon as possible.

From the standpoint of cost, this seems small indeed in comparison with that portion of the national economy which is dependent upon trees. It takes only a short look toward the future to realize that doing work of this kind is much cheaper than not doing it. Instead of four to six per cent on the investment, this kind of work promises to yield well over 100 per cent on the cost of the program.

The basic procedures for breeding trees are relatively simple from a technical standpoint. These principles include:

1. The selection followed by thorough testing and screening should be made of local trees in relation to all the desirable characteristics, including resistance to disease.
2. Similar critical examination of

[Continued on page 70.]

Above: General view of the blister-rust nursery near Wisconsin Rapids showing interplanting of ribes bushes with white-pine trees. Half shade covers two of the eight replications in the planting.

Below: Inoculation with blister rust. Ribes leaves infected with telia were fastened in the tops of old pine trees. They were left moist under muslin cages for sixty hours. Over ninety-nine per cent of the ordinary seedlings were killed by rust infections thus induced.

A. J. Riker is professor of plant pathology at the University of Wisconsin, Madison, Wis. This article is condensed from an illustrated talk given at the midwestern chapter meeting of the National Shade Tree Conference.

WINTER TREE PLANTING SPEEDED WITH DITCHER.

The many advantages of winter planting of young trees have long been recognized. Equally long, however, there has been the problem of making the necessary excavation in ground which may be frozen to a depth of two or three feet.

Barber-Greene Co., Aurora, Ill., manufacturer of material-handling, ashphalt-paving and ditch-digging equipment, was faced last winter with the problem of planting a row of young trees nearly two blocks long around a park which faced its factory. At the time the job was undertaken, the earth was frozen to a depth of about twenty-four inches.

One of Barber-Greene's machines, a model 44-C ditcher, was put to use for digging in the frozen ground. This crawler-mounted machine is capable of digging a trench up to twenty-four inches wide and eight feet, three inches deep. Since the digging boom operates vertically, its entire weight is concentrated on the buckets as they bite into the soil. This makes it possible to dig in frozen ground or even in rocky formations, such as caliche, coral and shale.

To make the excavation for the tree, the ditcher made a vertical cut to a depth of thirty inches. The first six inches of this was in solidly frozen ground; the balance was honeycombed with frost. The cut was twenty-four inches wide. The ditcher then dug forward a distance of about four feet. The boom was then raised up and out of the ground leaving a perfectly rectangular hole twenty-four inches wide, thirty inches deep and forty-eight inches long.

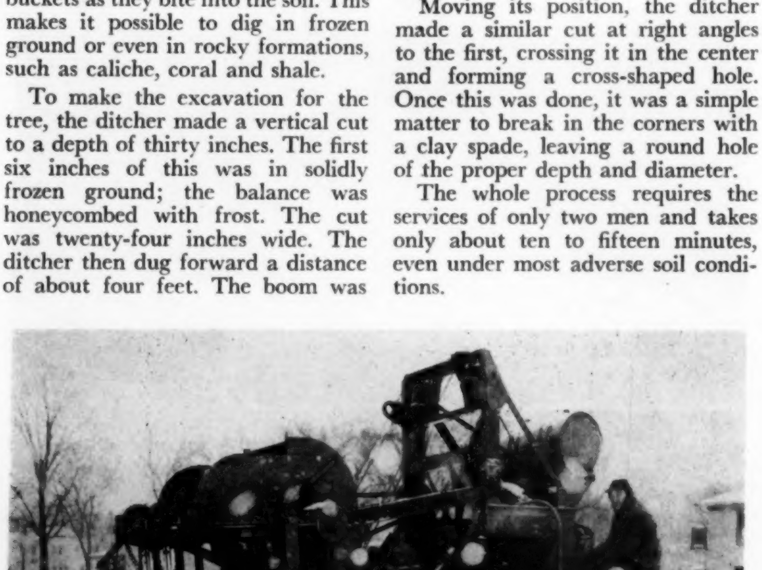
After the cross-shaped cut has been made by the ditcher, it is only a matter of a few strokes with a clay spade to break off the corners. This leaves a round hole, and the earth from broken corners fills up the excavation.

Moving its position, the ditcher made a similar cut at right angles to the first, crossing it in the center and forming a cross-shaped hole. Once this was done, it was a simple matter to break in the corners with a clay spade, leaving a round hole of the proper depth and diameter.

The whole process requires the services of only two men and takes only about ten to fifteen minutes, even under most adverse soil conditions.

The vertical boom, exclusive on Barber-Greene machines, is well adapted to this work. Wheel-type or ladder-type ditchers cannot make completely vertical cuts, that is, with not only the side walls, but the end walls vertical as well. The trench bottom is squared and free from sloping corners or uncut portions.

Barber-Greene vertical boom ditchers are to be found in almost every metropolitan area, in the hands of contractors, pipe-line installers and utility companies. Many such users find valuable off-season work for their machines in such applications as digging holes for tree planting.



Ditcher with vertical boom digs holes in frozen ground for planting trees in winter. The first cut completed, the ditcher is maneuvered into place and a second cut is made to the same depth at right angles to the first, forming a cross-shaped hole. All work was done during a blizzard in January.

DETERMINING LANDSCAPE PLANTING COSTS.

To determine the cost of planting, Owen B. Schmidt, of F. D. Moore & Sons, Narberth, Pa., advocates the labor-time basis as the fairest and most reliable method. Using only a percentage of the cost of the plant does not give a true distribution of cost, for with a mock orange, for instance, the cost would figure too low, while with an azalea, it would be too high.

On the opposite page are charts showing the average time necessary to complete various operations of planting, so that, by using the prevailing labor rate, the cost of planting may be determined. These charts are based upon experiences of F. D. Moore & Sons during the past fifteen years and were used by Mr. Schmidt to supplement his talk on "Costs of Planting" given at the nurserymen's conference held early last year at Pennsylvania State College.

In making up the charts, it was assumed that one cubic foot of soil weighs approximately eighty pounds; that one cubic yard of soil weighs approximately 2,160 pounds, and that one man can handle approximately five cubic yards of soil in a 9-hour day, or one cubic foot in five minutes.

To determine the price of a planted tree or shrub on the labor-time basis with the use of the charts, one should figure as follows:

1. Multiply the total labor hours, as shown on the chart, with the cost of labor.

2. To this figure add forty-four per cent of the cost of labor to cover sales expenses. (Of this forty-four per cent, figure ten per cent for sales expenses; twenty-three per cent for overhead, such as office, tools, insurance, unemployment and rent,

Chart 1--Average Time for Digging, Handling, Planting, Watering, Pruning, Guying and Wrapping Trees.

Ball Size Dia. Depth in inches.	Cu.ft. of soil in ball.	Weight of ball (lbs.)	Time to dig and lace in minutes.	Time to handle ball in minutes.	Size of hole required in inches.	Cu.ft. of soil in hole to excavate.	Time to dig hole in minutes.	Cu.ft. of soil displacement.	Time to plant and prune in minutes.	Time to water, wrap, guy and clean up in minutes.	Cu.ft. top soil handled in moving.	Total time in moving.
12x12	7/10	56	15	10	24	3 3/4	20	3	15	4	10½	1 hr. 4 min.
18x16	2	160	30	20	30	7½	28	5½	21	5	21	1 2/3 hrs.
24x18	4	320	60	40	36	13	65	9	49	12	38	3 2/3 hrs.
30x21	7½	600	114	76	48	26½	133	19	100	25	76	7 1/3 hrs.
36x24	12½	980	189	126	54	38	190	25½	143	36	114	11 1/3 hrs.
42x27	19	1520	285	190	66	64	320	45	240	60	185	18 ½ hrs.
48x30	28	2040	420	280	72	85	360	57	270	68	254	23 1/3 hrs.
54x33	38½	3060	579	386	84	127	635	88½	476	119	370	36 ½ hrs.
60x36	52	4160	780	520	90	159	795	107	596	149	474	47 1/3 hrs.
66x39	68	5440	1020	680	96	196	905	128	679	168	596	57 ½ hrs.
72x42	87	7160	1305	870	108	267	1240	180	930	233	795	76 hrs.

and eleven per cent for truck expenses in handling.)

3. To this total add fifty per cent to cover wet days, vacations, short days, breakdown and a little profit. The resulting figure represents the moving price of the plant.

4. To this moving price of the plant add the cost of the plant in the ground, markup on the plant and truck charges in handling. This total should be the selling price of the plant after delivered and planted. It should show an average return of twenty per cent, provided the markup on the plant is not under fifty per cent of the price of the plant in the ground.

IN MARCH a super garden center, to be called Garden World, Inc., will be opened by Harry Raben at Flushing, L. I., N. Y. This enterprise will be located on the grounds of the Marmon orchid range on Francis Lewis boulevard. Facilities will include some 25,000 feet of selling area under roof including glass, more than 100,000 feet of outdoor salesyard and parking facilities for several hundred cars. Mr. Raben's associates will be Nathan Marmon, Abe Marmon and Maurice Rogers, of Marmon Enterprises. Mr. Raben, who served twenty-three years with the Goldfarb flower shops in New York, was vice-president in charge of the garden sales division at the time of his resignation in December. He also was president of the United States Dutch Bulb Corp., a mail-order subsidiary.

Chart 2--Average Time for Digging and Planting Shrubs with Bare Roots.

Size of shrub in feet.	Time to dig in minutes.	Time to handle in minutes.	Time to plant, prune, water and clean up.	Total time in minutes.	No. one man can move per day.
2 to 3	5	5	20	30	18
3 to 4	6	5	25	36	15
4 to 5	8	6	31	45	12
5 to 6	10	8	42	60	9
6 to 8	20	10	60	90	6

Chart 3--Average Time for Digging and Planting Shrubs with Soil and Burlapped but not Laced.

2 to 3	8	6	31	45	12
3 to 4	10	8	42	60	9
4 to 5	20	10	60	90	6
5 to 6	30	15	90	135	4
6 to 8	60	30	180	270	2

Chart 4--Average Time for Planting 1,000 Square Feet with Ground Covers.

Number and kind of plants	Labor to dig bed 10 inches deep.	Labor to spread manure and peat and prepare bed.*	Time to plant.	Total Labor time.
500 Ivy	9 hrs.	9 hrs.	5 hrs.	23 hrs.
4000 Pachysandra	9 hrs.	9 hrs.	18 hrs.	36 hrs.
750 Sarcococca	9 hrs.	9 hrs.	7½ hrs.	25½ hrs.
4000 Ajuga	9 hrs.	9 hrs.	18 hrs.	36 hrs.
334 Roses	9 hrs.	9 hrs.	18 hrs.	36 hrs.
334 Honeysuckle	9 hrs.	9 hrs.	9 hrs.	27 hrs.
1000 Vinca minor	9 hrs.	9 hrs.	10 hrs.	28 hrs.

*On each bed was spread four bales of peat moss one inch deep and one ton of rotted manure also one inch deep.

Pointers on Propagation

By James S. Wells

GRAFTING IN THE COLDFRAME.

Although grafting is one of the most highly skilled and highly specialized operations in the nursery business, there is no reason why the small grower who wishes to try his hand at the job should not achieve a fair amount of success. However, we should say at once that it is not possible to achieve the same percentages of take in grafts when working in the coldframe as it is when using well constructed propagating houses that have been specially built for this work. The propagator should consider himself fortunate if he maintains an average of fifty per cent of the grafts which he makes in a coldframe. Because his capital outlay is so much less and because the cost of operating such a propagating unit is negligible compared with that of a heated greenhouse, he can afford to accept a lower percentage and still work profitably.

There is nothing essentially different about grafting in a frame from grafting in a greenhouse. The same methods of grafting are used. The only difference is the timing of the operation. When we graft in a heated greenhouse, we are providing artificially special conditions of temperature and humidity without regard for the time of year. In other words, we are upsetting the natural sequence of plant growth which follows the seasons and are providing special conditions in the greenhouse to stimulate the plants into growth. This condition of active growth is still necessary for the grafting of nursery stock, and therefore the grower who uses a coldframe has to wait until similar conditions are provided naturally. Instead of working when he will, he has to work with nature and with the seasons.

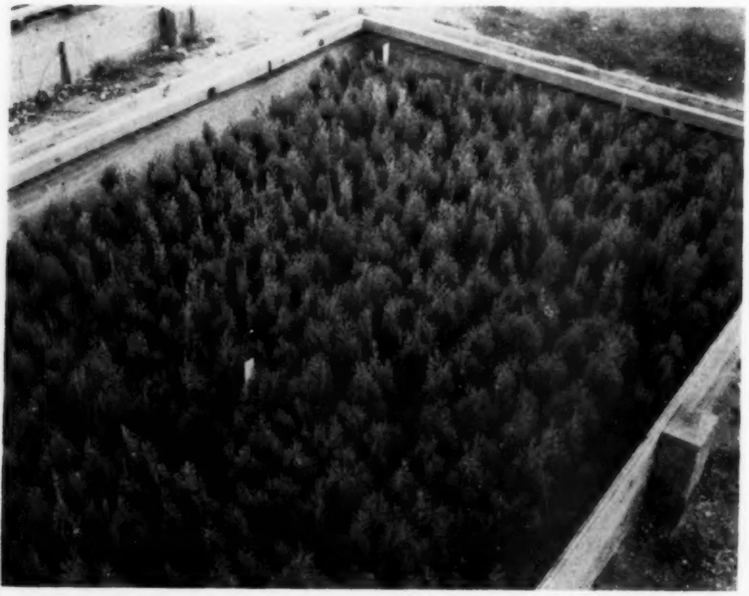
Take rhododendrons, for instance. We normally graft these in December and sometimes even in early January. By so doing, we have the grafts complete and ready to line out in the field by May and then obtain one year's development on the grafts by the end of the year. In coldframes this would be impossible. It would be necessary to wait until early April to do the grafting, for by that time the ground is warming up, air temperatures are higher and the natural spring surge of growth is under way; you are working with the plants and with nature when you graft at that time.

Graft your rhododendrons, bind them with twine which has been treated with Cuprinol to prevent rotting, plunge them into the frames, well covering the point of union with moist peat, and then keep the plants close until they have grown together. When grafting in this way it is usually more satisfactory to remove the top of the understock entirely and to plant scion and understock as described above and leave them undisturbed throughout the summer and the following winter, lifting them out early in the spring—that is, one year from the time the plants were grafted—and lining them out in open field beds under shades at that time. It is evident, therefore, that grafting in frames is a slower process than grafting in a greenhouse and that it must be done at a different time of the year. Junipers also respond best to grafting late in the spring as mentioned for rhododendrons, for the same reason or, in other words, because the scion and understock will best join together when the understock is in active growth as the spring weather warms up.

However, there are one or two plants which may be grafted early. Japanese maple is one and lilac is another. Both of these plants may be grafted onto dormant understocks, and these understocks may be bare root. After grafting, stock and scion should be covered with molten paraffin wax to seal the point of union from the air. The grafts should then be packed in boxes of moist peat and kept in a moderately warm temperature for three to four weeks, during which time stock and scion will callus and unite. The grafts will require careful watching, because almost overnight the scion will start into growth. Buds will begin to swell and develop, and if they are not then removed from the peat, they will break into full growth even though they are buried in the peat. This, of course, must not be allowed to happen. At that point in their development when growth appears imminent, the grafts must be placed in cold storage or, alternatively, the grafts must be lifted from the peat and carefully lined out in frames, being planted so that the point of union is fully covered. It is permissible to dispense with this initial callusing period, but, if so, a lower percentage of grafted plants will finally grow.

Magnolias can be grafted in the coldframe, using kobus seedlings; these are not available, then try some magnolias on large roots which have been carefully removed from established kobus plants. Root grafting is quite satisfactory if good roots are available, and by good I mean sections of the main root which have

[Concluded on page 65.]



A good stand of Berckmans golden biota, cold grafted in an unheated frame. Grafted March, 1950; photographed, October, 1950.

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Tree Maintenance

By Noel Wysong

INTRODUCTION.

Any person who makes his livelihood by caring for and maintaining trees and shrubs in a healthy condition is doing a work in which he well may take the utmost pride. It matters not at all whether he functions as a park superintendent, a city forester or an arborist in commercial practice, or is tagged with any other name indicative of his particular status or specialty in the field of shade tree preservation; he is contributing to the beauty and economic welfare of his community and his country.

Because his work is important, not only to himself but to others as well, he should provide himself with the best tools available. Knowledge is one of these tools. To be successful, an arborist must know something of the physiology of plants; he must have considerably more than a nodding acquaintance with botany, entomology, pathology and all the other sciences which are involved in the growth processes of any living organism. He must know chemicals, fertilizers, equipment and techniques of operation. He must have the ability and knowledge to serve as counselor, diagnostician and doctor of plant illnesses; he must be entirely familiar with the various ailments and plant pests that are likely to cause trouble to the trees in his region. He must keep constantly alert to learn new ideas, new processes, new techniques and new scientific discoveries. He must increase in every way possible his knowledge of arboriculture. And, in addition, he must serve as an educator to bring about more general recognition of the value of arboriculture.

In articles under this column heading in succeeding issues of the American Nurseryman we hope to assist in furthering public knowledge of arboriculture. We shall endeavor to present facts and opinions relative to this field, to discuss items of interest to all whose work, professional or amateur, involves maintenance of trees and shrubs and to report new developments, as they occur, in the field of plant science. N. W.

WHAT'S NEW IN OAK WILT?

C. H. Beckman, research student in the department of plant pathology, University of Wisconsin, in discussing "Translocation of Poisons, Dyes and Radioiodine and Its Relation to Oak Wilt," at the meeting of the America Phytopathological Society, December 1 to 3, 1950, at Memphis, Tenn., presented some data which tend to explain the rapid local spread of the oak wilt disease through natural root grafts. In one test plot, treatment of a single tree with a highly toxic chemical resulted in the death of five nearby trees. When these trees were treated with the same chemical, before the tissues had dried, twenty-one additional trees were killed.

Radioactive iodine moved within six hours to three trees, respectively, two, five and twelve feet from the nearest treated tree, Mr. Beckman said. Upward movement of radioactive iodine was as rapid as twelve feet within fifteen minutes in jack and bur oaks, but downward movement was slight except where root grafts to other trees occurred. Root grafting between species in the white oak group, bur to bur and white to white oak, was found to occur considerably less frequently than between species in the red oak group, while in thirty-one plots of mixed bur and jack oaks only one case of root grafting between these species was discovered.

Mr. Beckman's studies help explain why, occasionally, a tree of the white oak group may remain uninfected in an area surrounded by dead or infected red oaks. The fact that chemicals, or the oak wilt disease, can move through the roots as rapidly as twelve feet within six hours emphasizes the need for speed in isolating infected trees by trenching or other means to prevent local spread. N. W.

NOEL B. WYSONG.

Noel B. Wysong is currently serving as vice-president of the National Shade Tree Conference and as secretary-treasurer of the midwestern chapter of that organization, having served as president of the latter group in 1949. Since 1940 he has been chief forester of the Forest Preserve District of Cook County, with his office at River Forest, Ill.

Receiving his B. A. degree in 1927 from Friends' University, Wichita, Kan., his native state, he obtained his professional training and a B. S. degree from the New York state college of forestry at Syracuse University in 1930. For three years thereafter he was engaged in commercial arborists' work at Syracuse and then joined the forestry branch of the National Park Service. In 1939 he became assistant chief forester of Cook county and was appointed to his present position the following year, being responsible for supervision of the forestry activities in an area of more than 37,000 acres.

ICE INJURY TO TREES.

A combination of ice and wind often constitutes disaster for shade trees. This is the time of year such damage can be expected. Late in the afternoon of February 13, 1950, in eastern Iowa, Illinois and western Indiana, a freezing mist and rain began falling, and by the following morning branches of trees and shrubs were coated with a tremendous load of ice. With the rain came wind, and thousands of trees in the storm area suffered heavy damage. Large branches were broken; in many cases entire trees were destroyed. Along Chicago's Lake Shore drive scarcely a tree escaped severe injury.

Since similar storms occur almost every year in one or more sections of the country with like results to trees, it would not be amiss to spend a little time in study to see if anything can be done to minimize the effects of such storms. It seems doubtful whether there is a completely satisfactory, single answer to the problem, but under varying conditions different measures may be employed with benefit.

Every arborist, and nearly every tree owner, is familiar with the cables and brace rods commonly used to provide additional strength to long, pendulous branches heavily burdened with a multitude of twigs and foliage. There is no question that this treatment, though not 100 per cent effective, does help reduce storm damage. But too many homeowners

EVERGREEN LINING-OUT STOCK

		100 rate each	1000 rate each
10,000	**Abies balsamea,** 2-yr., S, 1½ to 2½ ins.	$0.05	$0.04
10,000	**Abies balsamea,** 3-yr., S, 2 to 3 ins.	.06	.05
500	**Abies balsamea,** 4-yr., T, 3 to 5 ins.	.08	.07
5000	**Abies fraseri,** 2-yr., S, 1½ to 3 ins.	.06	.05
5000	**Abies fraseri,** 3-yr., S, 2 to 4 ins.	.07	.06
4000	**Abies fraseri,** 4-yr., T, 3 to 6 ins.	.12	.10
1000	**Buxus Newport Blue,** 3-yr., TT	.35	.30
300	**Chamaecyparis obtusa gracilis,** pot grafts	.35	...
200	**Chamaecyparis obtusa gracilis,** 2-yr. grafts	.60	...
1000	**Chamaecyparis plumosa,** 1-yr., T	.15	.14
1000	**Chamaecyparis plumosa,** 2-yr., T, 6 to 10 ins.	.20	.19
250	**Chamaecyparis plumosa,** 3-yr., T, 8 to 15 ins.	.30	.25
1000	**Chamaecyparis plumosa aurea,** 2¼-in. pots, 10 to 12 ins.	.22½	...
1000	**Juniperus chinensis hetzi,** 2¼-in. pots, 6 to 8 ins.	.20	...
500	**chinensis columnaris glauca,** pot grafts	.45	...
500	**chinensis keteleeri,** pot grafts	.45	...
1000	**chin. pfitzeriana,** 2¼-in. pots, 8 to 10 ins.	.30	.27½
1500	**depressa plumosa,** 2¼-in. pots, 6 to 8 ins.	.25	...
500	**depressa plumosa,** 2-yr., T, 6 to 8 ins.	.25	...
1000	**excelsa stricta,** 2¼-in. pots, 6 to 8 ins.	.17½	.15
200	**horizontalis douglasi,** 2-yr., T, 6 to 8 ins.	.35	...
200	**hor. glauca hetzi,** 1-yr., T	.25	...
1000	**sabina,** 2¼-in. pots, 6 to 8 ins.	.17½	...
250	**sabina,** 2-yr., T, 4 to 8 ins.	.20	...
1000	**suecica,** TT, 12 to 15 ins.	.45	...
5000	**virginiana,** 1-yr., S	.03	.02½
500	**virginiana canaerti,** pot grafts	.45	...
500	**Ilex crenata,** 1-yr., T	.20	...
500	**Ilex crenata convexa,** 1-yr., T, 4 to 6 ins.	.20	...
500	**Ilex glabra,** 2-yr., T, 6 to 8 ins.	.25	...
2000	**Leucothoe catesbaei,** 2-yr., T	.20	.15
4000	**Picea canadensis alba,** 4-yr., T, 4 to 9 ins.	.12	.10
1000	**Picea canadensis alba,** TT, 8 to 10 ins.	.25	.20
1000	**Picea excelsa,** T, 4 to 6 ins.	.10	.09
100	**Picea excelsa,** TT, 12 to 18 ins.	.45	...
1000	**Picea moerheimi,** pot grafts	1.00	...
200	**Picea omorika,** 2-yr., S	.15	...
5000	**Picea pungens,** 3-yr., S, 2 to 5 ins.	.07	.06
3000	**Picea pungens,** 3-yr., T, 2 to 5 ins.	.10	.09
300	**Picea pungens kosteri,** pot grafts	1.00	...
1000	**Pieris japonica,** 2-yr., T	.25	.22½
1000	**Pieris japonica,** 3-yr., T	.35	.32½
1000	**Pieris japonica,** TT	.45	.40
3000	**Pinus banksiana,** 3-yr., S, 6 to 15 ins.	.04	.03
1000	**banksiana,** 3-yr., T, 8 to 16 ins.	.05	.04
15,000	**densiflora,** 2-yr., S, 4 to 8 ins.	.03	.02
5000	**densiflora,** 4-yr., T, 8 to 15 ins.	.08	.07
10,000	**mughus,** 2-yr., S, 2 to 4 ins.	.06	.05
10,000	**mughus,** 3-yr., S, 3 to 6 ins.	.09	.08
5000	**mughus,** 4-yr., T, 4 to 8 ins.	.12	.10
2000	**mughus,** 4-yr., T, 6 to 10 ins.	.30	.25
6000	**nigra austriaca,** 2-yr., S, 3 to 7 ins.	.06	.05
1500	**nigra austriaca,** 3-yr., T, 4 to 8 ins.	.12	.10
5000	**strobus,** 3-yr., T, 2 to 5 ins.	.08	.07
10,000	**strobus,** 4-yr., T, 5 to 10 ins.	.12	.10
20,000	**sylvestris,** 2-yr., S, 3 to 6 ins.	.03	.02½
15,000	**sylvestris,** 2-yr., S, 6 to 12 ins.	.05	.04
3000	**thunbergi,** 2-yr., S	.05	.04
4000	**thunbergi,** 4-yr., T, 12 to 18 ins.	.10	.09
10,000	**Pseudotsuga douglasi,** 2-yr., S, 2 to 5 ins.	.06	.05
1000	**Pseudotsuga douglasi,** T, 6 to 9 ins.	.10	.09
1000	**Pseudotsuga douglasi,** TT, 6 to 8 ins.	.20	...
200	**Rhododendron Album Elegans,** pot grafts	.75	...
100	**Boule de Neige,** pot grafts	.75	...
300	**Caractacus,** pot grafts	.75	...
100	**Everestianum,** pot grafts	.75	...
100	**Ignatius Sargent,** pot grafts	.90	...
100	**Lord Roberts,** pot grafts	.90	...
200	**Mrs. P. Den Ouden,** pot grafts	.90	...
200	**Prof. F. Bettex,** pot grafts	.90	...
300	**Roseum Elegans,** pot grafts	.75	...
100	**Van Deerden Poelman,** pot grafts	.90	...
100	**Van der Brocke,** pot grafts	.75	...
100	**Van der Hoop,** pot grafts	.90	...
100	**Mrs. C. S. Sargent,** pot grafts	.90	...

		100 rate each
500	**Taxus baccata fastigiata,** 2-yr., T, 5 to 10 ins.	$0.35
100	**baccata repandens,** TT, 10 to 12 ins.	.45
100	**baccata repandens,** 2-yr., T	.30
1150	**cuspidata,** 1-yr., T	.18
3000	**cuspidata,** 2-yr., T, 8 to 12 ins.	.25
2000	**cuspidata,** 3-yr., T	.30
1000	**cuspidata andersoni,** 2-yr., T, 6 to 10 ins.	.30
1500	**cuspidata browni,** 2-yr., T	.30
50	**cuspidata browni,** TT, 15 to 18 ins.	.85
200	**cuspidata capitata,** sdlg., TT, 12 to 15 ins.	1.60
100	**cuspidata capitata,** sdlg., TT, 15 to 18 ins.	1.75
1500	**cuspidata capitata,** sdlg., 4-yr., TT, 10 to 12 ins.	.50
500	**cuspidata columnaris,** 3-yr., T, 5 to 10 ins.	.30
100	**cuspidata columnaris,** TT, 15 to 18 ins.	.75
1200	**cuspidata compacta,** 2-yr., T, 8 to 12 ins.	.30
1000	**cuspidata nana,** 1-yr., T	.18
2000	**cuspidata nana,** 2-yr., T	.30
2000	**cuspidata nana,** 4-yr., TT, 6 to 10 ins.	.45
1500	**cuspidata nana erecta,** 2-yr., T, 6 to 10 ins.	.30
1000	**cuspidata stovekeni,** 2-yr., T, 6 to 10 ins.	.30
1000	**cuspidata thayerae,** 2-yr., T, 6 to 10 ins.	.30
2000	**cuspidata thayerae,** 4-yr., TT	.50
1000	**hunnewelliana,** 2-yr., T	.30
2000	**intermedia** (spreading), 2-yr., T	.30
2000	**media** (spreading), 1-yr., T	.18
500	**media** (spreading), TT, 10 to 12 ins.	.50
2000	**media Halloran Strain,** 2-yr., T, 6 to 10 ins.	.30
1000	**media Halloran Strain,** TT, 12 to 15 ins.	1.00
2000	**media hatfieldi,** 2-yr., T, 8 to 10 ins.	.30
1200	**media hatfieldi,** 3-yr., T, 8 to 10 ins.	.35
1000	**media hatfieldi,** 4-yr., TT, 8 to 12 ins.	.40
1000	**media hatfieldi,** 5-yr., TT	.50
2500	**media hicksi,** 2-yr., T, 8 to 10 ins.	.30
500	**media hicksi,** 3-yr., T	.35
1000	**media hicksi,** 4-yr., TT, 10 to 12 ins.	.40
100	**media hicksi,** 5-yr., TT, 12 to 15 ins.	.75
2000	**Thuja occidentalis,** 3-yr., T, 3 to 8 ins.	.10
1000	**occ. boothi,** 1-yr., T	.15
1600	**occ. boothi,** 2-yr., T, 4 to 8 ins.	.30
1000	**occ. boothi,** TT, 12 to 15 ins.	.50
1000	**occ. compacta,** 2-yr., T, 4 to 6 ins.	.25
600	**occ. compacta,** 3-yr., T, 5 to 9 ins.	.30
1000	**occ. douglasi** (spiralis), 2-yr., T, 8 to 12 ins.	.30
500	**occ. douglasi aurea,** 2-yr., T, 8 to 10 ins.	.30
500	**occ. elegantissima,** TT, 10 to 12 ins.	.45
1000	**occ. globosa,** TT, 8 to 10 ins.	.25
1000	**occ. hoveyi,** 1-yr., T	.15
1000	**occ. nigra,** 2-yr., T, 6 to 8 ins.	.30
2000	**occ. nigra,** 4-yr., TT, 10 to 12 ins.	.45
1000	**occ. pyramidalis,** 2¼-in. pots, 10 to 12 ins.	.25
1500	**occ. pyramidalis,** 2-yr., T, 8 to 12 ins.	.30
500	**occ. pyramidalis,** pot grafts	.35
500	**occ. pyramidalis,** 2-yr. grafts, 15 to 24 ins.	.70
1000	**occ. rosenthali,** 4-yr., TT	.45
400	**occ. spiralis,** TT, 12 to 18 ins.	.60
1000	**occ. wareana,** 2¼-in. pots, 6 to 8 ins.	.25
1500	**occ. wareana,** 2-yr., T, 6 to 8 ins.	.30
1000	**occ. wareana,** TT, 8 to 12 ins.	.35
250	**occ. wareana plicata,** 2-yr., T, 5 to 10 ins.	.30
1000	**occ. woodwardi,** 2¼ in. pots, 6 to 8 ins.	.20
250	**occ. woodwardi,** 2-yr., T, 6 to 8 ins.	.30
800	**occ. woodwardi,** TT, 8 to 12 ins.	.35
5000	**Thuja orientalis,** 2-yr., S	.03
2000	**Thuja orientalis,** 4-yr., T, 10 to 18 ins.	.07
1000	**Thuja orientalis aurea nana,** pot grafts	.35
1000	**Thuja orientalis aurea nana,** 2-yr., grafts	.60
10,000	**orientalis compacta,** 2-yr., S, 4 to 12 ins.	.05
50,000	**Tsuga canadensis** (collected), seedlings, 6 to 12 ins.	.10
3000	**canadensis,** 3-yr., T, 10 to 12 ins.	.30
200	**sargenti,** pot grafts	.75
100	**sargenti,** 1-yr., grafts	.90

fail to realize the need of such work until after their trees have been damaged; a better job of selling the public on this phase of arboriculture would result in the saving of many fine shade trees.

Cabling and bracing systems seldom are seen in trees along city streets, in parks or other public properties; rarely do cities or other tax-supported bodies employ enough trained personnel to do tree work which is not immediately and visibly essential. This economic impasse is likely to continue indefinitely; in such areas, therefore, the planting of tree species that are highly resistant to storm damage, either by virtue of smaller size at maturity or greater resiliency of wood fibers, seems to be

ORNAMENTAL STOCK

Abelia Grandiflora
Abelia Sherwoodi
Berberis T. Atropurpurea
Cotoneaster Horizontalis
Ilex C. Rotundifolia
Retinospora, in variety
Taxus Cuspidata
Taxus Hicksi

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	Each
Weigela Eva Rathke, 2 to 3 ft.	$0.35
Hydrangea Peegee, 18 to 24 ins.	.25
Hydrangea Peegee, 2 to 3 ft.	.30

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ROSA MULTIFLORA JAPONICA
Upright thorny type.
Row run, 1½ to 4 mm.
$18.00 per 1000.
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Glen Head, N. Y.

DECIDUOUS LINING-OUT STOCK

		100 rate each	1000 rate each
200	**Abelia grandiflora,** 1-yr., C.	$0.10	...
200	**Acer dasycarpum,** whips, 3 to 4 ft.	.35	...
100	**Acer dasycarpum atropurpureum,** 1-yr., grafts	.90	...
1000	**Acer palmatum,** 1-yr., S. No. 2	.04	$0.03½
200	**Acer palmatum atropurpureum,** pot grafts	.75	...
5000	**Althaea (Hibiscus),** 1-yr., S.	.03½	.03
300	**Ampelopsis heterophylla,** 1-yr., S.	.10	...
3000	**Ampelopsis veitchi,** 1-yr., S, No. 2	.03	.02½
5000	**Berberis thunbergi,** 1-yr., S, 6 to 12 ins.	.03	.02
2000	**Berberis thunbergi,** 2-yr., T, 9 to 12 ins.	.07½	.06
5000	**Cornus florida,** 1-yr., S, No. 2	.03	.02½
2000	**Cornus florida rubra,** pot grafts	.40	.37½
3000	**Cornus kousa,** 2-yr., T	.20	.15
1000	**Cornus kousa,** 3-yr., T	.35	.30
200	**Cotoneaster wilsoni,** 2-yr., T, 12 to 18 ins.	.25	...
8000	**Cydonia japonica,** 1-yr., S	.03½	.03
2000	**Cydonia japonica,** 2-yr., T	.08½	.07½
3000	**Daphne cneorum,** R.C. (from bench)	.12	.10
2000	**Deutzia gracilis,** R.C. (from flats)	.05	.04
1000	**Deutzia gracilis,** 1-yr., C.	.08	.07½
2000	**Deutzia gracilis,** 2-yr., C., 9 to 12 ins.	.15	.12½
500	**Deutzia lemoine,** 2-yr., C, 9 to 12 ins.	.10	...
100	**Elaeagnus argentea,** 2-yr., T, 12 to 15 ins.	.25	...
500	**Elaeagnus umbellata,** 2-yr., T	.25	.20
1000	**Euonymus alatus,** S.W.C.	.11	.10
500	**Euonymus alatus,** 2-yr., S	.10	...
1700	**Euonymus alatus compactus,** S.W.C.	.11	.10
1000	**Euonymus vegetus,** R.C. (from flats)	.10	.09
2000	**Euonymus vegetus,** 2-yr., T, 6 to 10 ins.	.30	.25
1800	**Forsythia spectabilis,** H.W.C.	.07½	.06
1000	**Hydrangea arb. grandiflora,** 1-yr., T, 12 to 18 ins.	.15	.12½
1000	**Hydrangea arb. grandiflora,** 1-yr., C.	.06	.05½
100	**Hydrangea paniculata** single, 1-yr., C.	.10	...
2500	**Hydrangea pan. grandiflora** (P.G.), 2-yr., C, 9 to 12 ins.	.12	.10
500	**Hydrangea pan. grandiflora** (P.G.), 2-yr. T, 12 to 18 ins.	.20	.15
200	**Hydrangea petiolaris,** 2-in. pots	.15	...
1500	**Kolkwitzia amabilis,** 1-yr., T	.11	.10
1000	**Kolkwitzia amabilis,** 2-yr., T, 12 to 18 ins.	.30	.25
1000	**Laburnum vulgare,** 1-yr., S	.06	.05
2000	**Ligustrum ovalifolium** light, 1-yr., C.	.04	.02½
5000	**Ligustrum amurense** north, 1-yr., C.	.04	.02½
5000	**Ligustrum amurense,** north, 1-yr., 12 to 18 ins.	.05	.04½
1000	**Ligustrum ibolium,** light, 1-yr.	.04	.02½
300	**Lonicera bella albida,** H.W.C.	.05	.04½
300	**Lonicera halliana,** 1-yr., T., 12 to 18 ins.	$0.08	...
100	**Lonicera heckrotti,** 1-yr., T	.15	...
300	**Magnolia soulangeana,** pot grafts	.60	...
200	**Magnolia soulangeana,** 1-yr., T, grafts, 12 to 18 ins.	.75	...
200	**Magnolia soulangeana,** 1-yr., T, grafts, 18 to 24 ins.	1.00	...
150	**Malus atrosanguinea,** 1-yr., grafts	.35	...
100	**hupehensis,** 1-yr., grafts	.35	...
100	**neidzwetskyana,** 1-yr., grafts	.35	...
100	**purpurea eleyi,** 1-yr., grafts	.35	...
100	**sargenti,** 2-yr., grafts	.45	...
500	**Philadelphus coronarius,** H.W.C.	.06	...
2000	**coronarius aureus,** 2¼-in. pots	.15	$0.12½
1000	**lemoinei,** 2-yr., C, 9 to 12 ins.	.06	.05
1000	**lemoinei,** 2-yr., C, 12 to 18 ins.	.12	.10
750	**lemoinei Albatre,** H.W.C.	.06	.05½
1500	**virginalis,** H.W.C.	.10	.09½
1150	**Physocarpus monogynus,** 2-yr., C, 9 to 12 ins.	.06	.05
300	**Populus alba,** 1-yr., C, 3 to 4 ft.	.12	...
300	**Populus nigra italica,** 1-yr., C, 4 to 6 ft.	.15	...
30	**Prunus Amanogawa,** 1-yr., whips, 2 to 3 ft.	.75	...
700	**Prunus serrulata Kwanzan,** 1-yr., whips, 2 to 3 ft.	.50	...
200	**Prunus serrulata Kwanzan,** 1-yr., whips, 3 to 4 ft.	.75	...
500	**Ribes alpinum,** 2-yr., C, 9 to 12 ins.	.15	...
10,000	**Rosa multiflora,** 1-yr., S, 2 to 3 mm.	.02½	.02
10,000	**Rosa multiflora,** 1-yr., S, 3 to 4 mm.	.03½	.02½
100	**Salix pentandra,** 2-yr., C, 5 to 6 ft.	.75	...
100	**Sophora japonica,** 1-yr., S.	.10	...
500	**Sorbus aucuparia,** whips, 3 to 4 ft.	.50	...
200	**Sorbus aucuparia,** whips, 4 to 6 ins.	.65	...
1500	**Spiraea Anthony Waterer,** 2-yr., C, 6 to 9 ins.	.15	.12½
300	**Spiraea Anthony Waterer,** 2-yr., T, 9 to 12 ins.	.20	.15
1500	**Spiraea froebeli,** 2-yr., C, 9 to 12 ins.	.10	.08
1000	**Symphoricarpos chenaulti,** 2-yr., C, 9 to 12 ins.	.07	.06
500	**Symphoricarpos vulgaris,** 2-yr., C, 9 to 12 ins.	.06	.05
500	**Viburnum burkwoodi,** pot grafts	.40	...
500	**Viburnum carlesi,** pot grafts	.40	...
500	**Viburnum opulus nana,** 1-yr., T	.10	...
500	**Viburnum tomentosum,** 2-yr., C, 9 to 12 ins.	.18	...
500	**Weigela Eva Rathke,** 2-yr., C, 6 to 9 ins.	.10	...
1000	**Weigela rosea,** 1-yr., C, 12 to 18 ins.	.08	.07½
1000	**Weigela rosea,** 1-yr., C, 18 to 24 ins.	.10	.09
500	**Weigela rosea variegata,** 2-yr., C, 9 to 12 ins.	.10	...
10,000	**Wistaria sinensis,** 1-yr., S	.03½	.03

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Please note—All pot grafts will be ready for shipment early May, 1951, at proper time.

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the logical approach to solution of the problem on public properties. It was noted that the storm of last year caused relatively little damage to honey locust, hackberry, oak and hawthorn in the Chicago area; elms suffered heavily.

Judicious pruning often serves to prevent excessive storm damage. One of the most common forms of damage-prevention pruning is the removal of one of two branches that spring from a narrow, V-shaped crotch. If such crotches are cross-sectioned, invariably a thin segment of bark will be found actually separating the two branches and preventing the growth of connecting wood tissue for a considerable distance below the apparent junction of

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Healthy, vigorous stock grown in field beds with ample room between plants for proper development.

		Per 100
1500	**ILEX CONVEXA BULLATA,** X, 6 to 9 ins.	**$30.00**
800	**ILEX CRENATA,** X, 4 to 7 ins.	**25.00**
600	**TAXUS VERMEULEN Upright Pyramidal,** 3-yr., XX, 8 to 10 ins.	**40.00**
1500	**TAXUS CUSPIDATA, Spreading,** 4-yr., XX, 10 to 15 ins., Heavy	**65.00**
400	**TAXUS CUSP. NANA (Brevifolia),** 4-yr., XX, 9 to 12 ins., Heavy	**65.00**
400	**TAXUS HICKSI, Columnar,** 3-yr., XX, 8 to 10 ins.	**35.00**
200	**JUNIPER, PFITZER,** 3-yr., XX, 10 to 15 ins.	**45.00**
100	**JUNIPER, PFITZER,** 2-yr., X, 6 to 9 ins.	**25.00**
50	**RETINOSPORA PLUMOSA** (Green), 3-yr., X, 12 to 15 ins.	**35.00**
1500	**TSUGA CANADENSIS** (Hemlock), 6-yr., XX, 12 to 15 ins.	**45.00**
1000	5-yr., X, 10 to 14 ins.	**30.00**
1000	4-yr., X, 8 to 12 ins.	**18.00**
1000	3-yr., X, 6 to 9 ins.	**12.00**

ONE-YEAR TRANSPLANTS FOR GROWING ON

		Per 100
5000	**TAXUS CUSPIDATA, Spreading**	**$19.00**
4000	**TAXUS HICKSI, Columnar**	**19.00**
1450	**TAXUS HATFIELDI, Upright**	**20.00**

HEAVY ROOTED CUTTINGS

	From sand. Will be ready in May or early June.	Per 100
5000	**TAXUS CUSPIDATA, Spreading**	**$ 9.00**
1000	**TAXUS CUSPIDATA NANA** (Brevifolia)	**12.00**
15,000	**TAXUS HATFIELDI, Upright**	**10.00**
5000	**TAXUS HICKSI, Columnar**	**9.00**
3000	**TAXUS HENRYI,** Compact, semispreading	**9.00**
2000	**TAXUS CAPITATA Upright,** leaders	**12.50**
2000	**TAXUS VERMEULEN, Pyramidal**	**9.00**

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	(Blooming-size Plants)	Per 100
2000	**IRIS KAEMPFERI** (Jap. Iris), Mixed colors	**$15.00**
6000	**HEMEROCALLIS KWANSO FLOREPLENA** (Double Daylily)	**15.00**

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1800	**TAXUS CAPITATA,** Sheared, 2 ft., XXX	**$4.00**
	2½ ft., XXX	**5.00**
	3 ft., XXX	**6.00**
3000	**TAXUS HATFIELDI,** 1½ ft., XXX	**3.00**
1500	**TAXUS HICKSI,** 1½ ft., XXX	**2.75**
2500	**COLORADO SPRUCE,** 2 to 3 ft., XXX	**2.50**
	3 to 4 ft.	**3.50**
	1½ to 2 ft.	**1.50**

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the limbs. These crotches are structurally weak, and splitting is likely to occur if the tree becomes burdened with ice. While the branches still are small, the one of lesser importance to the ultimate shape of the tree should be removed.

In another form of correctional pruning, the weight carried by main branches often can be lightened by removal of one or more heavy terminal limbs without detriment to the shape and character of the tree. Sometimes this is carried to extremes. Through fear of storm damage, tree owners occasionally insist that their trees be pruned drastically, even to the extent of cutting branches back to stubs of four to six inches in diameter. Though this may effectually prevent storm breakage, such pruning completely disfigures the tree and may lead to serious branch decay starting from the severed ends or to scalding of the bark through sudden exposure to the full effects of the sun.

Notably, trees that stand close together in clumps or groves, approximating natural forest conditions, suffer less from storms than do those that stand alone in isolated and exposed situations. Those who have charge of planting in parks or large estates should recognize the fact that closely spaced trees afford protection to one another, and strive for group plantings as much as is compatible with good landscape design.

Artificial support, wise choice of species, correctional pruning and grouped plantings provide at least part of the answer to the problem of minimizing storm damage. N. W.

FORMERLY located at 37 Sound View road, Groton, Conn., Alfred Delaporta has moved to a 9-acre nursery on R.F.D. 2, on the Boston Post road, New London station, Conn.

A RECENT arrival from Boskoop, Holland, A. Kluis is now in business at 311 Maple avenue, Pompton Lakes, N. J. Before he emigrated to the United States, his former business at Boskoop, Kluis & Koning, was liquidated.

FORMERLY in business at Childress, Tex., W. W. Shortt recently moved to Ashdown, Ark., where he opened Shortt's Nursery, doing a wholesale, retail and mail-order business, as well as some landscaping. Mr. Shortt has been in the nursery business since 1918. He plans to add a greenhouse and florists' shop later.

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Can Colleges Train Nurserymen?

By Harold H. Clegg

What is lacking in the college-trained nurseryman is not easily expressed. I have overheard much dissatisfaction expressed by employers of students and graduates of nursery management, landscape architecture and horticulture schools. I have personally hired fifty or more such college men in the past twelve years, and I think that I can now hope to analyze the shortcomings of our educational system with some hope of fairness.

I have discussed with my fellow nurserymen what colleges fail to teach. The reactions are variable, and all nurserymen seem to hesitate to criticize our schools for fear of being unfair; yet all nurserymen point to the fact that their best nursery help has always been the employee who learned the trade, operation by operation, over a period of years. I think it is not the nurseryman who expects too much of the schools, but it is the student who thinks that the school has done more for him than it could. To illustrate:

The most charitable remark that I have ever heard in this connection was voiced by a college graduate who is a successful nurseryman. He said, in substance, that we should regard the nursery management graduate as a person who has yet to serve his apprenticeship. And I do think that most owners of nurseries accept college graduates on this basis. The difficulty seems to be that the college graduate is not willing to serve a reasonable term of years learning the practical operations of nursery management or landscape practice. His professors, upon being consulted as to their views on the matter, invariably disclaim having ever encouraged this point of view in their students; in fact, most teachers agree that what they are able to teach must needs be theoretical, and they wholeheartedly endorse any program which will give the student practical experience and they recommend to the student that he spend his summers working in nurseries. A great deal is being done to make college curriculums more specific in their commercial applications.

To illustrate one phase of the curriculum problems of landscape schools, I might mention two of the weaknesses which have been most glaring in the students who have been employed by me. One has been the absence of courses in ecology, as applied to the nursery industry, and the second has to do with the lack of instruction in nursery management courses in the care and operation of mechanical equipment. I mention these two because they are both fundamental and get us down to the root of the trouble of college training in general. I am a college graduate, and I am speaking from experience.

I ask the professors how a student can be expected to do any growing of plants or employ plant materials in landscape designing unless the student is taught which varieties do well in sun or shade, in well drained or poorly drained, in acid or calciferous soil. They sometimes say that it is possible for the student to take ecology as an elective, possibly in his senior year, that it is undoubtedly a general course not very applicable to ornamental plants and that it is tucked away in some other department's (such as botany) curriculum.

As for training the student in the use of machinery, such is not usually a college subject. If the student is a farm boy, he undoubtedly knows a great deal about machinery maintenance and repair and has an aptitude for mechanics in general. However, if the student is a city dweller, he may not know enough to put battery water in all three cells, and the nurseryman will have his machinery ruined in the hands of a landscape architect playing at nursery management.

This brings us down to the type of man who makes a landscape architect or a nursery manager. What kind of timber do we have to work

[Continued on page 62.]

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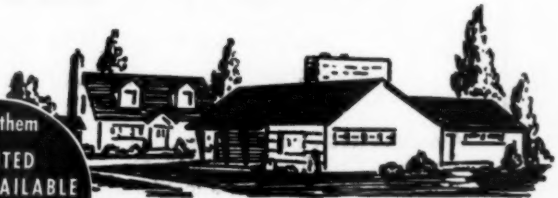

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Plant Notes Here and There

By C. W. Wood

Fifteen years ago I should have told you, if you had asked, and some did, that the white form of Liatris scariosa would be one of our most popular border perennials and summer cut flowers within ten years. But it is still far from reaching that point. In fact, I see it less today than I did ten years ago. What happened along the way is beyond my ken, but it is surely not as it should be unless the plant developed some quirk which it did not have through the years that we grew it commercially. I wonder if the white form of L. pycnostachya, which I have heard of but have not seen, will suffer a like fate.

Type L. scariosa, which grows from two to four feet tall, depending largely upon soil fertility, and blooms from August onward, is a desirable plant and, next to L. pycnostachya, is the most useful of the genus. But in L. scariosa alba we have a really outstanding plant according to my way of looking at these matters. It is useful both in the border, where its ability to stand dry weather and other adverse conditions and its spire-like growth give it a broad field, and as a cut flower, because of its pure white flowers, pleasing type of inflorescence and season of bloom.

Petrophytum.

From the standpoint of the botanists, petrophytum is closely related to spiraea and, in fact, was included with the latter by our earlier botanists. By gardeners who know it at all (and not many know it), it is still generally called spiraea. The differences between the two genera are quite technical and need not be discussed at this time. Botanists speak of five species of petrophytum, only three of which are known to me; namely, P. caespitosum, P. cinerascens and P. hendersoni.

Of these P. caespitosum would be my choice, not only because of its pretty mat of silky gray leaves, which is always a recommendation for any plant, but also for its miniature stems, never over three inches in height, as it grew here in northern Michigan, each carrying a small head of frothy white flowers. It has been several years since the plant has been under observation here, but I vividly remember it as one of the choicest little evergreen shrubs that I ever grew, pleasing in appearance at all times and especially so in middle to late summer when its floral display is at its height.

The last of the three mentioned previously, P. hendersoni, would be a close second in my list of desirables. It lacks some of the silkiness of the other; instead it has the charm of leaves bluish on top with a touch of pinkish-lavender underneath, the whole leaf assuming a bronzy tint at the approach of winter. It is larger than P. caespitosum, making a mound up to six inches in height, with larger heads (to three inches in length) of white flowers, and blooms earlier than the other.

The only recommendation for P. cinerascens over the other two that was noted here is that it seems easier to manage. That should not, however, be construed to mean that the plant is not a good garden ornament, for it only lacks some of the silkiness of caespitosum and the foliage color of the other and, as I remember now, a little of the head size of both. The plant itself is comparable to P. hendersoni in size. And it proved to be definitely easier than either to manage under garden conditions in this climate.

One of the needs of petrophytums, we found, is for root moisture or at least a cool root run, as under a large rock. Another is protection from the burning sun during the hottest part of the day. That may be supplied by locating the plants on the north side of a rock in the garden, where they will be shielded from sunshine from noon onward, or by placing them so that a tree will shield them during the same time, and yet the plants

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American Red Pine, 3-0, 8 to 12 ins.	6.00	50.00
Scotch Pine, 2-0, 2 to 3 ins.	3.00	18.00
Scotch Pine, 2-0, 3 to 5 ins.	3.50	30.00
Scotch Pine, 3-0, 7 to 15 ins.	4.50	....
Oriental Red Pine, 2-0, 2 to 3 ins.	3.00	25.00
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Pitch Pine, 3-0, 8 to 14 ins.	2.50	20.00
Austrian Pine, 2-0, 2 to 5 ins.	3.50	30.00
White Pine, 3-0, 3 to 5 ins.	3.50	30.00
White Pine, 3-0, 5 to 8 ins.	4.50	40.00
Mugho Pine (Dwarf), 2-0, 2 to 3 ins.	2.50	20.00
Mugho Pine (Dwarf), 3-0, 3 to 5 ins.	3.50	30.00
European Larch (Deciduous), 3-0, 4 to 8 ins.	2.50	20.00
European Larch (Deciduous), 3-0, 8 to 16 ins.	4.00	30.00
Japanese Larch (Deciduous), 2-0, 3 to 5 ins.	2.50	20.00
Japanese Larch (Deciduous), 2-0, 5 to 9 ins.	4.00	30.00
Norway Spruce, 2-0, 3 to 4 ins.	3.00	20.00
Norway Spruce, 3-0, 4 to 6 ins.	3.50	30.00
Norway Spruce, 3-0, 6 to 10 ins.	5.00	40.00
Colorado Blue Spruce, 3-0, 3 to 6 ins.	5.00	40.00
Douglas Fir, 2-0, 3 to 5 ins.	3.50	30.00
Douglas Fir, 2-0, 5 to 8 ins.	4.50	40.00
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15 to 18 ins.	3.50	30.00
12 to 15 ins.	2.90	25.00
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2 to 3 ft.	4.50	40.00
18 to 24 ins.	3.20	28.00
Honeysuckle, morrowi		
3 to 4 ft.	5.50	50.00
2 to 3 ft.	4.50	40.00
18 to 24 ins.	3.20	28.00

	Per 10	Per 100
Honeysuckle, tatarica rosea		
3 to 4 ft.	$5.50	$50.00
2 to 3 ft.	4.50	40.00
18 to 24 ins.	3.20	28.00
Honeysuckle, tatarica rubra Wheeling.		
2 to 3 ft.	4.50	40.00
18 to 24 ins.	3.20	28.00
Honeysuckle, zabeli		
2 to 3 ft.	4.50	40.00
18 to 24 ins.	3.20	28.00
Hydrangea arborescens grandiflora		
2 to 3 ft.	5.50	50.00
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15 to 18 ins.	3.50	30.00
12 to 15 ins.	2.90	25.00
Spiraea arguta		
2 to 2½ ft.	4.00	35.00
18 to 24 ins.	3.50	30.00
12 to 18 ins.	2.40	20.00
Spiraea froebeli		
2 to 2½ ft.	3.50	30.00
18 to 24 ins.	2.90	25.00
12 to 18 ins.	2.10	18.00
Spiraea thunbergi		
2 to 2½ ft.	4.00	35.00
18 to 24 ins.	3.50	30.00
12 to 18 ins.	2.40	20.00
Spiraea vanhouttei		
3 to 4 ft.	4.00	35.00
2 to 3 ft.	2.90	25.00
18 to 24 ins.	2.10	18.22
Weigela Eva Rathke		
18 to 24 ins.	4.50	40.00
12 to 18 ins.	3.20	28.00
Weigela rosea		
3 to 4 ft.	5.50	50.00
2 to 3 ft.	4.50	40.00
18 to 24 ins.	3.20	28.00

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will not be subject to drip. In the nursery they may be grown in a shaded (about half) frame. Still another requisite for permanent success seems to be a rather poor, gravelly soil to furnish perfect drainage, and, at the same time, to be not overrich.

I cannot speak from experience as to the best propagating method. Rehder says the plant is grown from seeds, treated like spiraea. That would surely be a slow process, judging from the slow growth made by mature plants. He also mentions the fact that seedlings are not tolerant of excess moisture. Division is quite rapid and sure and is the only method ever used here. Preece recommended cuttings and points out the necessity of taking them just as the flowers commence to fade.

The Question of Biennials.

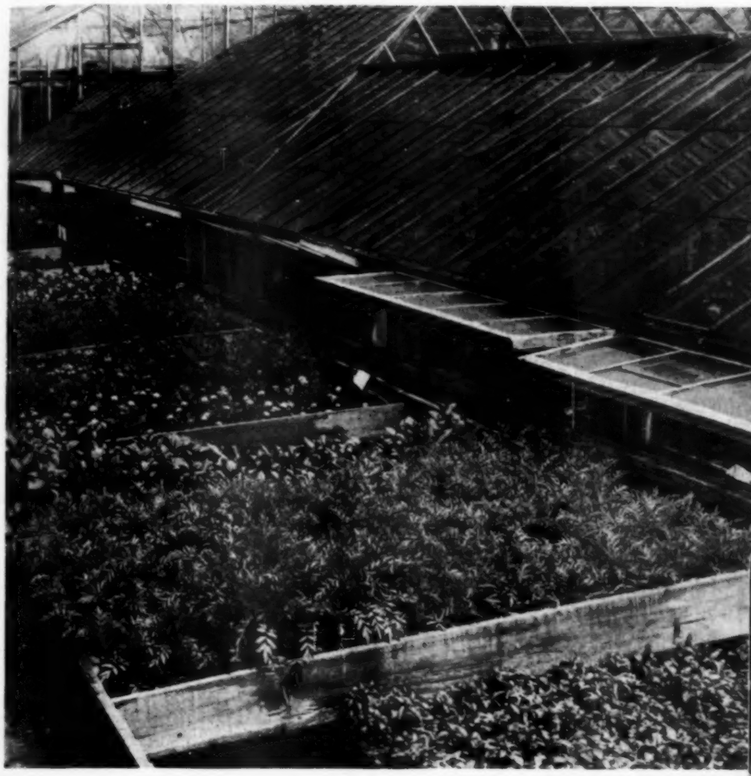
Many gardeners have a rather easily understood aversion against all biennials, those "damnably dilatory annuals," as some vexed gardener once remarked. It is true, of course, that they have to be planted every year, and that they have to be nursed along two years only to have them go out in a blaze of glory or, as in the case of Canterbury bells, not even reach that period. If you have clients who put up these and other arguments against buying biennials, ask them where they can replace among true perennials the brilliant performance of Canterbury bells, foxgloves, sweet williams and wall flowers, among others.

Thalia.

A grower of aquatics in Maryland wonders if Thalia dealbata would be hardy in his climate and asks for a few words on the plant, which he knows only by reputation. I regret that I, too, know it only from reputation and a little observation in the south, where I admired it in a few natural plantings.

It is one of the few members of the marantaceae that grow as far out of the tropics as South Carolina, and, like most of its kind, it can be found close to swampy areas. As it has come under my observation, it is one of the stateliest of aquatic plants, deserving far more attention from water and bog gardeners in the warmer parts of the country than it seems to be given. I remember one swamp in the Gulf coast section of Texas where T. dealbata grew abundantly, making one of the loveliest waterscapes I have ever seen. There it grew to five feet in height, and, in August, its spikes of purple flowers, covered with a white powder

[Continued on page 66.]



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BIRD
Established 1795

PLANT BANDS	PRICE PER 1000—SIZES IN INCHES							
Sold in units of 1000 only	1½ x 1½ x 2½	1¾ x 1¾ x 2½	2 x 2 x 2½	2 x 2 x 3	2½ x 2½ x 3	3 x 3 x 3	4 x 4 x 3	4 x 4 x 4
VITA-BAND 10	3.60	3.90	4.40	4.90	5.85	6.75	8.85	11.10

Prices higher in Rocky Mtn., Pacific Coast, Texas and Gulf State areas.

BIRD VITA-BANDS • TOM THUMB FLATS • VITA-POTS • RED POTS

Coming Events

MEETING CALENDAR.

January 16 to 18, Illinois State Nurserymen's Association, Hotel La Salle, Chicago.

January 22 and 23, Washington State Nurserymen's Association, Commercial hotel, Yakima.

January 22 to 24, short course for arborists, landscape gardeners and nurserymen, Neil House, Columbus, O.

January 24 to 26, Michigan Association of Nurserymen, Hotel Pantlind, Grand Rapids.

January 25 and 26, Ohio Nurserymen's Association, Neil House, Columbus.

January 26, Western New York Nurserymen's Association, Rochester.

January 28 to 30, Virginia Nurserymen's Association, Hotel John Marshall, Richmond.

January 29 and 30, Kentucky State Nurserymen's Association, Seelbach hotel, Louisville.

January 31, short course for nurserymen, University of Maryland, College Park.

January 31 and February 1, Pennsylvania Nurserymen's Association, Roosevelt hotel, Pittsburgh.

February 1, Oregon Association of Nurserymen, Georgian room, Heathman hotel, Portland.

February 1 and 2, Tennessee State Nurserymen's Association, Andrew Jackson hotel, Nashville.

February 2, New Jersey Association of Nurserymen, Trenton.

February 6 to 8, New England Nurserymen's Association, Hotel Kenmore, Boston, Mass.

February 9, West Virginia Nurserymen's Association, Gauley Bridge.

February 14 to 16, Midwestern chapter of the National Shade Tree Conference, Hotel La Salle, Chicago.

February 20, Rhode Island Nurserymen's Association, Johnson's Hummock's, Providence.

March 22 and 23, Southern Shade Tree Conference, Palm Beach, Fla.

WASHINGTON DATES.

Dates for the midwinter meeting of the Washington State Nurserymen's Association and chapter 28 of the American Association of Nurserymen have been set for January 22 and 23. Headquarters will be the Commercial hotel, Yakima.

Speakers from the State College of Washington, at Pullman, will discuss topics of horticultural and economic interest. Other speakers will present some modern merchandising practices.

MICHIGAN CONVENTION.

The first day of the twenty-ninth annual convention of the Michigan Association of Nurserymen, January 24 to 26 at the Hotel Pantlind, Grand Rapids, will be devoted to registration and the annual get-together party.

Business sessions will begin Thursday morning with an address by President Charles B. Greening. Harold Davidson, coordinator of the training courses in nursery and landscape management at Michigan State College, East Lansing, will discuss the progress made in the courses during the year, and Dr. Roy Marshall, assistant director of experiment stations at Michigan State College, will talk on research and experiments affecting the nursery industry. Final speaker at the morning session will be C. A. Boyer, chief of the state bureau of plant industry, who will talk on the outlook for 1951.

An illustrated lecture on climate control, by Dr. Joseph E. Howland, garden editor of House Beautiful, will open the afternoon session and will be followed by a panel discussion, led by Prof. F. L. O'Rourke, superintendent of Hidden Lake Gardens Arboretum, on subjects of current interest to nurserymen.

In the evening members and guests will assemble in the Grand ballroom of the hotel for a banquet to honor past presidents of the Michigan Association of Nurserymen. Dr. Richard P. White, executive secretary of the American Association of

NORTHERN-GROWN LINING-OUT STOCK

	Per 100	Per 1000
Betula papyrifera		
1 to 2 ft.	$ 6.00	$ 50.00
2 to 3 ft.	8.00	70.00
3 to 4 ft.	25.00	....
4 to 6 ft.	40.00	....
Clethra alnifolia		
6 to 18 ins.	6.00	50.00
Ilex verticillata		
1 to 2 ft.	6.00	50.00
Syringa vulgaris		
1 to 2 ft.	6.00	50.00
Viburnum cassinoides		
1 to 2 ft.	6.00	50.00
EVERGREENS		
Abies balsamea		
4 to 8 ins.	4.00	25.00
8 to 12 ins.	8.00	60.00
Thuja occidentalis		
6 to 9 ins.	4.00	25.00
6 to 12 ins.	5.00	40.00
Tsuga canadensis		
4 to 8 ins.	4.00	25.00
8 to 12 ins.	5.00	40.00
HEMLOCK TRANSPLANTS		
Tsuga canadensis		
4 to 8 ins., 1-yr. tr.	12.00	100.00
8 to 12 ins., 2-yr. tr.	18.00	160.00

The above stock is first-quality collected lining-out stock, except as otherwise noted. Send for complete list of **Hardy Native Ferns, Lilies, Orchids, Wild Flowers, Trees, Shrubs and Evergreens.**

ISAAC LANGLEY WILLIAMS
P. O. Box 352
EXETER, NEW HAMPSHIRE

TAXUS

Quality stock with J. B. certificate; in carload or truckload lots.

TAXUS **capitata,** 2½ to 8 ft.

TAXUS **cuspidata,** 1½ to 4 ft.

TAXUS **nana** and **intermedia,** 1 to 3 ft.

TAXUS **hicksi** and **hatfieldi,** 2 to 4 ft.

Also

TAXUS **capitata liners,** 3 to 4 yrs., 1 to 2 ft.

BULK'S NURSERIES
Babylon, L. I., N. Y.

SPRING SURPLUS

		Each
20	**Weeping Cherry,** 2-yr., heavy	$4.50
20	**Hawthorn, Paul's Scarlet,** 7 to 8 ft.	4.00
10	**Laburnum Vossi,** 7 to 8 ft.	4.00
10	**Weeping Red Peach,** 5 to 6 ft.	3.00
15	**Cherry, Kwanzan,** 5 to 6 ft.	3.50
10	**Malus Atrosanguinea,** 6 to 8 ft.	3.50
10	**Malus Eleyi,** 6 to 8 ft.	3.50
10	**Malus Niedzwetskyana,** 6 to 8 ft.	3.50
6	**Cercis Canadensis,** 7 to 9 ft.	5.00

Cash, please.

BRIMFIELD GARDENS NURSERY
245 Brimfield Rd. Wethersfield, Conn.

LILACS

On own roots.
Large plants, 5 ft. and up.
Charles X, William Robinson, Pres. Grevy, Leon Gambetta, etc.

To plant now
AMERICAN ARBORVITAE, 10 ft.
An assortment of heavy stock for landscaping.

RED LAKE RED CURRANTS, 2-yr. No. 1

SAMUEL FRASER NURSERY
GENESEO, N. Y.

FIELD-GROWN PERENNIALS

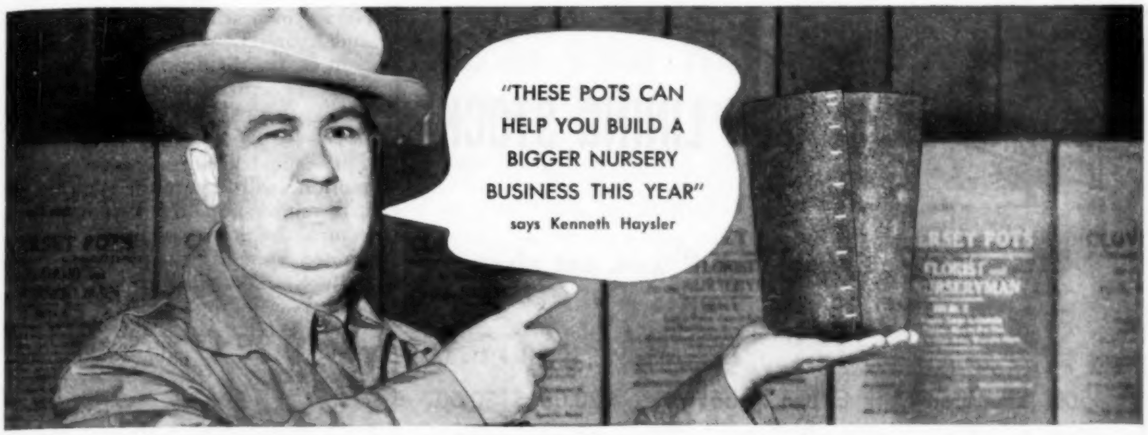
First-quality stock at reasonable prices. Hybrid Delphiniums; Hardy Chrysanthemums, 1-yr. clumps; Hardy Phlox. Complete List of Hardy plants and Rock Garden material, new and rare varieties. It's free.

N. A. HALLAUER
WEBSTER, N. Y.

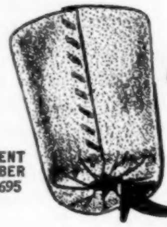
EVERGREEN LINERS

Taxus—Ilex Convexa—Hemlock
Heavy transplants and rooted cuttings.
Trade list mailed on request.

BROOKFIELD GARDENS
RT. 6 DELAWARE, N. J.


"THESE POTS CAN HELP YOU BUILD A BIGGER NURSERY BUSINESS THIS YEAR"
says Kenneth Haysler

Now's the time to order CLOVERSET* POTS



THIS EXCLUSIVE FEATURE insures healthy, growing plants. The bottom tabs on all Cloverset Pots seal in place after first watering, leaving correct opening for proper drainage.

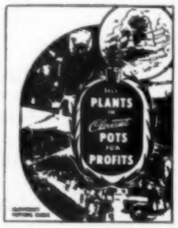
*PATENT NUMBER 2073695

NOW THAT '51 IS HERE it's high time to complete your plans for spring and summer business. And, of course, if you want MORE business with a bigger margin of profit, you'll want plenty of Cloverset Pots on hand. This is the best time to order; then you will have them when you are ready to start potting.

Thousands of nurserymen the country over have proved that it pays to do business the Cloverset way. Cloverset Pots save time in the potting room; they make plants easier to handle from start to bloom; they attract customers and extend your profitable cash-and-carry business from early spring to late fall. And they cost so little that you can easily afford to give them away with the plants.

But we urge you not to delay ordering; naturally, first orders get earliest shipment. Don't be caught short without the Cloverset Pots you need to help your business show a bigger profit this year!

(If you haven't yet discovered the advantages of using these easy-handling, time-saving pots, mail the coupon right away for a free copy of our big illustrated Potting Guide, and order a complete set of sample pots. One pot each of all eight sizes and weights will be sent promptly for only 50c, postpaid.)



A Few of the Hundreds of Uses for Cloverset Pots:

• For potting Greenhouse Plants, roses of all sizes, Shrubs, Fruit Trees and Evergreens, ready for customer to carry home and transplant. • For potting Bulbs, to sell in bloom next spring. • For Camellias, Gardenias and other plants with tender blooms. • For Peonies in spring bloom. • For Chrysanthemums, Bleeding Heart, Phlox and all perennials. • For Evergreen liners; can be planted pot and all. • For Water Lilies; pot will last a year under water. • Many others!

PRICE LIST EFFECTIVE JAN. 1, 1951

TYPE	Height	Top Diam.	Nearest Clay Pot	Approx. Weight	PRICE		
SPECIAL LIGHT	(Packed 200 in carton)			Per 200	Per 200	Per 1000	
No. 0	5½ ins.	5 ins.	6 ins.	25 lbs.	$5.50	$25.00	
No. 1	6½ ins.	6 ins.	7 ins.	37 lbs.	7.50	35.00	
No. 2	9½ ins.	7 ins.	8 ins.	50 lbs.	8.50	40.00	
STANDARD HEAVY	(Packed 100 in carton; 300 or more at 1000 price)			Per 100	Per 100	Per 1000	
No. 0	5½ ins.	5 ins.	6 ins.	35 lbs.	$3.25	$30.00	
No. 1	6½ ins.	6 ins.	7 ins.	52 lbs.	4.50	42.50	
No. 2	9½ ins.	7 ins.	8 ins.	78 lbs.	5.00	47.50	
No. 3	9 ins.	8 ins.	9 ins.	[illegible] lbs.	5.50	52.50	
EXTRA HEAVY	(Packed 25 in carton)			Per 100	Per 25 $7.00	Per 50 $13.25	Per 75 $19.75
No. 4	13 ins.	12 ins.		200 lbs.	Per 100 $23.75	Per 1000 $210.00	

Practical Nurserymen for Over 27 Years

Cloverset Flower Farm

105th Street and Broadway Kansas City 5, Missouri

USE THIS HANDY COUPON NOW TO ORDER POTS OR SAMPLE SET

Cloverset Flower Farm, Dept. A
105th St. and Broadway
Kansas City 5, Missouri

Please send items checked. I enclose $________________.

☐ SAMPLE SET, 50c postpaid.

☐ FREE POTTING GUIDE.

☐ CLOVERSET POTS in quantities noted below. (We will ship via freight unless otherwise specified.)

SIZE	QUANTITY	WEIGHT	TOTAL PRICE
No. 0			
No. 1			
No. 2			
No. 3			
No. 4			

NAME______________________________

FIRM______________________________

ADDRESS____________________________

CITY______________________________

JEWELL PROPAGATORS

EVERGREEN LINING STOCK

FIRST Well established 2¼-in. pot plants from our greenhouses

		Per 100	Per 1000
4500	American Dark Green Arborvitae	$20.00	$180.00
3600	Jewell Pyramidal Arborvitae	20.00	180.00
3000	Woodwardi Globe Arborvitae	20.00	180.00
2000	Juniper, Andorra	18.00	160.00
6000	Juniper, Glauca Hetzi	22.00	200.00
3000	Juniper, Kosteri	20.00	180.00
4000	Juniper, Pfitzeriana	22.00	200.00
6000	Juniper, Savin	20.00	180.00
5500	Juniper, Von Ehron	20.00	180.00

SECOND 3-year-old seedlings of pine and spruce, stocky and well rooted.

		Per 100	Per 1000
20,000	**Austrian Pine,** 3 to 6 ins.	$4.50	$40.00
14,000	**Austrian Pine,** 6 to 9 ins.	6.00	55.00
30,000	**Mugho Pine,** 3 to 6 ins.	4.00	35.00
20,000	**Mugho Pine,** 6 to 9 ins.	5.50	50.00
15,000	**Scotch Pine,** 6 to 8 ins.	4.50	40.00
10,000	**Scotch Pine,** 8 to 10 ins.	5.50	50.00
30,000	**Black Hills Spruce,** 2 to 4 ins.	3.00	25.00
16,000	**Black Hills Spruce,** 4 to 6 ins.	5.00	45.00
40,000	**Colorado Blue Spruce,** 3 to 6 ins.	4.00	35.00

Spring, 1951, delivery. Pot plants available at any time.
Seedlings available as soon as we can dig in spring.

JEWELL NURSERIES, Inc.

Box 457 **Lake City, Minnesota**

Nurserymen, will be the toastmaster, and Arthur L. Watson, a past president of the Michigan group, is planning the entertainment in his capacity as general chairman of the convention.

The final business session Friday morning will feature the showing of a 15-minute film on federal barberry control by Morris Turner, of the United States Department of Agriculture, and a talk entitled "Report from Washington," by A. A. N. Secretary White. Afterward, chapter 2 of the A. A. N. will meet to elect officers.

VIRGINIA SPEAKERS TO STRESS "PLANT AMERICA."

The Virginia Nurserymen's Association will feature "Plant America" as its convention theme when it meets January 28 to 30 at the Hotel John Marshall, Richmond.

The keynote address will be delivered by Dr. Richard P. White, executive-secretary of the Association of American Nurserymen, Monday morning when he will discuss the subject, "Plant with Vision." That morning George S. Harris, of Princeton Nurseries, Princeton, N. J., will discuss "The Value of Better Production," and Harold Seyler, of the Farr Nursery Co., Weiser Park, Pa., will speak on "What Is a Profitable Business?"

Lloyd C. Bird, Virginia state senator and industrialist, will address the nurserymen at luncheon Monday. His subject will be "Plant a Better America with Courage, Patriotism and Conviction." Later that afternoon, following a business session, the theme of the convention will be further developed by Howard C. Taylor, Rosedale Nurseries, East View, N. Y., whose talk will be titled "The Landscape Nurseryman Is Planning and Planting for a Better America." A panel featuring Messrs. Seyler, Harris and Taylor will consider the subject "Plant for Success with a Better Balance Between Production and Sales."

That night the banquet session will have Dr. Raymond B. Pinchbeck, dean of Richmond College, University of Richmond, as the main speaker. Continuing with the "Plant America" theme, Dr. Pinchbeck will survey the world situation and will offer a platform for better living to Americans through "Planting with Optimism." The banquet will honor the past presidents of the association.

The Tuesday morning session will open with a panel discussion on "The Nursery Business and a War Econ-

Insure the stands in your Nursery Rows by planting Our Choice Lining-Out Stock

Well established in Dowfume MC-2 Sterilized soil

Carefully grown and established in clay pots as illustrated on the left. Shipped to you packed by the ordinary method used by most nurseries, or for a slight added cost, in New Bird Neponset Pots as illustrated on the right. Bird Pots lend added protection both in transit and after arrival, which is well worth your consideration.

Juniperus Chinensis Pfitzeriana

Available for prompt or later shipment.

Please refer to our complete Ad in the Classified Section of this issue.

Write for our Price List of finished B&B Evergreens.

T. G. OWEN & SON, Inc.
COLUMBUS MISSISSIPPI

omy." Participants will include Harold Seyler, Howard Taylor, George Harris, Owen Wood and Edgar Quillen. Mr. Harris will then address the convention on "Better Planning in the Use of Personnel, Land and Equipment." Albert Beecher, landscape architect, department of horticulture, Virginia Polytechnic Institute, Blacksburg, will speak on "The Responsibility of the Landscape Nurseryman for Better Landscape Design."

The final formal session will be reserved for the members who will meet at luncheon to hear Dr. Wesley P. Judkins, head of the department of horticulture, Virginia Polytechnic Institute, talk on "Plant with Ideas and Ideals Through Knowledge."

Before the convention opens formally Monday morning with Dr. White's address, members will have "Breakfast with the Pioneers," see a motion picture and hear a preview of the convention program, by A. J. Shoosmith, Richmond, convention program chairman.

The convention will open informally Sunday afternoon for registration. Prior to that all the educational and commercial exhibits displayed in the hotel will be opened to the public. Following registration, members

LINING-OUT STOCK

SPRING, 1951

T—Once Transplanted
TTT—Thrice Transplanted
TT—Twice Transplanted
FR—Field Row

		Per 100	Per 1000
30,000	**Althaea,** 1-yr. Sdlgs.	$ 3.50	$ 27.50
2500	**Buxus Newport Blue,** 3-yr., TT, FR	35.00	300.00
7500	**Cornus Kousa,** 2-yr., T, FR	20.00	150.00
1500	**Cornus Kousa,** 3-yr., T, FR	35.00	300.00
15,000	**Cydonia Japonica,** 1-yr., Sdlgs.	3.50	27.50
3500	**Cydonia Japonica,** 2-yr., T, FR	8.50	75.00
525	**Euonymus Radicans Carrierei,** 2-yr., TT, FR	35.00	300.00
6000	**Leucothoe Catesbaei,** 2-yr., T	20.00	150.00
3000	**Picea Canadensis Alba,** 3-yr., TT, FR	25.00	200.00
25,000	**Pieris Japonica,** 1-yr., T	8.50	75.00
15,000	**Pieris Japonica,** 3-yr., TT	30.00	250.00
15,000	**Pieris Japonica,** 5-yr., TTT, FR	50.00	450.00
2000	**Pinus Mughus,** 4-yr., T, FR	30.00	250.00
75,000	**Rosa Multiflora Japonica,** 1-yr. Sdlgs., 2 to 3 mm.	2.50	15.00
150,000	**Rosa Multiflora Japonica,** 1-yr. Sdlgs., 3 to 6 mm.	3.50	25.00
6500	**Taxus Cuspidata,** 4-yr., TT, FR	45.00	400.00
2500	**Taxus Cuspidata Nana** (Brevifolia), 2-yr., T	30.00	250.00
3500	**Taxus Media Hatfieldi,** 2-yr., T	30.00	250.00
5000	**Taxus Media Hatfieldi,** 4-yr., TT, FR	45.00	400.00
4000	**Taxus Media Hatfieldi,** 5-yr., TT, FR	70.00	600.00
2500	**Taxus Media Hicksi,** 2-yr., T	30.00	250.00
4000	**Taxus Media Hicksi,** 4-yr., TT, FR	45.00	400.00
4000	**Taxus Media Hicksi,** 5-yr., TT, FR	70.00	600.00
2000	**Thuja Occidentalis Nigra,** 3-yr., TT, FR	40.00	350.00
2000	**Thuja Occidentalis Pyramidalis,** 2-yr. grafts, FR	70.00	600.00
5000	**Thuja Orientalis Aurea Nana** (Biota), 2-yr. grafts, FR	60.00	500.00
25,000	**Wistaria Sinensis,** 1-yr. Sdlgs.	3.50	27.50

Samples mailed on request.

BOULEVARD NURSERIES
NEWPORT, RHODE ISLAND

RA·PID·GRO

pioneered in foliage feeding

RA-PID-GRO contains all the known elements and trace elements necessary for growth, production, and a normal plant life—all immediately available to the plant, in one secret formula.

Most of your troubles are caused by deficiency in food elements. You can't correct this by insecticides or fungicides. Get smart—use a balanced ration . . .

RA-PID-GRO

The Original, Nitrogen-Derived-from-Urea Complete Foliage Plant Food

Don't expect first class stock from a one-chemical diet. RA-PID-GRO, the complete plant food, enters the sap stream immediately through the leaves—and almost as quickly when fed at the base.

SPRAY ALONG WITH INSECTICIDES

Spray RA-PID-GRO along with insecticides. It is instantly soluble, is compatible with most insecticides and fungicides, and will not damage your spray machines.

Results will amaze you—better growth, heavier trees, better color. 40% more first class stock. Think of it!

THERE IS NO OTHER PLANT FOOD MADE LIKE

RA·PID·GRO

RA-PID-GRO CORPORATION · DANSVILLE, NEW YORK

of the hospitality committee will be on hand to provide transportation and serve as guides to visiting nurserymen who wish to see any of the local nurseries. That evening Richmond nurserymen will be hosts at a get-together party. A luncheon and a fashion show has been scheduled for the ladies Monday at noon.

KENTUCKY's 25TH.

Two full days, January 29 and 30, will be devoted to the twenty-fifth anniversary celebration of the Kentucky State Nurserymen's Association at the Seelbach hotel, Louisville. A luncheon has been planned for Monday afternoon at 12:30, after which President Dan Gardiner, Louisville, will make his annual address. Frank S. LaBar president of LaBars' Rhododendron Nurseries, Stroudsburg, Pa., and Paul Ulman, Indiana state entomologist, Indianapolis, will give talks.

In the evening a buffet dinner will be served, and colored slides of familiar faces in the nursery industry will be shown.

Tuesday morning will be devoted to a sales clinic at which trade promotion ideas will be featured. After the 12:30 luncheon, there will be a business meeting and also talks by John B. Wight, Cairo, Ga., vice-president of the American Association of Nurserymen, and Louis Hillenmeyer, Jr., Lexington, vice-president of the National Landscape Nurserymen's Association.

That evening at 6 o'clock members of the Louisville Retail Nurserymen's Association will be hosts at a cocktail party preceding the banquet. Dr. William Bilfur, department of biology, University of Louisville, will be the after-dinner speaker.

TENNESSEE PROGRAM.

Headquarters for the forty-sixth annual convention of the Tennessee Nurserymen's Association, to be held January 31 to February 2, will be the Andrew Jackson hotel, Nashville, Tenn. Davidson county nurserymen will be hosts at a smoker at 8 o'clock Wednesday evening, and the formal meeting will be called to order the following morning at 10 o'clock by President H. R. Potter, Joelton.

The invocation will be given by the Rev. James W. Henley, pastor of West End Methodist church, Nashville. Mayor T. L. Cummings will welcome the nurserymen to Nashville, and Thomas Faulkner, Faulkner's Mountain View Nursery,

GRAFTED STOCK
For Spring, 1951, Delivery

	Per 10	Per 100
Acer palmatum atropurpureum	$7.00	$65.00
Acer palmatum dissectum atropurpureum	7.00	65.00
Cornus florida alba plena	5.00	45.00
Cornus florida rubra	5.00	45.00
Cornus florida rubra Prosser	7.00	65.00
Fagus sylvatica riversi	7.00	65.00
Ilex opaca femina	5.00	45.00
Juniperus chinensis columnaris glauca	5.00	45.00
Juniperus chinensis columnaris viridis	5.00	45.00
Juniperus chinensis keteleeri	5.00	45.00
Juniperus chinensis neaboriensis	5.00	45.00
Juniperus chinensis sargenti	5.00	45.00
Juniperus chinensis sargenti glauca	5.00	45.00
Juniperus chinensis meyeri	5.00	45.00
Juniperus virginiana burki	5.00	45.00
Juniperus virginiana canaerti	5.00	45.00
Juniperus virginiana elegantissima	5.00	45.00
Juniperus virginiana glauca	5.00	45.00
Juniperus virginiana globosa	5.00	45.00
Juniperus virginiana kosteriana	5.00	45.00
Juniperus virginiana schotti	5.00	45.00
Juniperus virginiana pyramidaformis hilli	5.00	45.00
Juniperus sabina Von Ehron	5.00	45.00
Magnolia lennei	7.00	65.00
Magnolia soulangeana	6.50	60.00
Magnolia soulangeana nigra	6.50	60.00
Magnolia stellata	6.50	60.00

	Per 10	Per 100
Magnolia stellata rosea	$6.50	$60.00
Magnolia stellata rubra	7.00	65.00
Magnolia stellata, Water Lily	6.50	60.00
Magnolia rustica rubra	7.00	65.00
Thuja occidentalis douglasi (spiralis)	4.50	40.00
Thuja occidentalis elegantissima	4.50	40.00
Thuja occidentalis lutea, Mary Corey	4.50	40.00
Thuja occidentalis lutea, George Peabody	4.50	40.00
Thuja occidentalis nigra	4.50	40.00
Thuja occidentalis pyramidalis	4.50	40.00
Thuja occidentalis rosenthali	4.50	40.00
Thuja occidentalis wareana (sibirica)	4.50	40.00
Thuja orientalis aurea nana	4.00	35.00
Thuja orientalis conspicua	4.00	35.00
Thuja orientalis elegantissima	4.00	35.00
Tsuga canadensis pendula	5.50	50.00
Tsuga canadensis pendula, 1-yr. grafts	7.00	65.00

All the above shipped from 2¼-inch rose pots.

1-YEAR MAGNOLIA GRAFTS
For either immediate or Spring, 1951, shipment.

	Per 10	Per 100
Magnolia soulangeana	$8.00	$75.00
Magnolia soulangeana nigra	8.00	75.00
Magnolia stellata	8.00	75.00

Prices are F.O.B. Mountain View, N. J., packing additional at cost. Usual terms to those of established credit. No goods sent C.O.D. unless 25 per cent of amount is sent with order. All this material is listed subject to prior sale and crop conditions.

HESS' NURSERIES MOUNTAIN VIEW, N. J.

Maryville, will respond on behalf of the association. Secretary Robert Boyd, Boyd Nursery Co., McMinnville, will read the roll call, and Vice-president C. E. Braswell, Braswell Nurseries, Smithill, will introduce new members. Following the president's address and the report of the secretary-treasurer, Dr. Duke McCall, executive secretary of the Southern Baptist Convention, will speak on "The Whys of Communism"; then A. N. Pratt, state horticulturist, will give a talk entitled "The Return of the Prodigal," and George Morehead, Morehead Tree Surgery, Nashville, will discuss "Our Shade Tree Problems."

The afternoon session will be prefaced with a movie "Tennessee Holiday," shown through the courtesy of the Standard Oil Co. The first speaker on the program will be Dr. L. G. McLean, division of state parks, Tennessee department of conservation, who will speak on "Our Recreational Opportunities in Tennessee." Next Hardin H. Conn, executive secretary and general counsel of the Tennessee Businessmen's Association, will speak on "Free Enterprise, the Hope of Tomorrow," and Edward Jones, the state commissioner of agriculture, will tell of "The Department's In-

We offer the following items to the trade at cleanup prices for Spring, 1951, orders:

	Per 100
Red Althaea, 2 to 3 ft.	$17.00
Blue Althaea, 2 to 3 ft.	17.00
White Althaea, 2 to 3 ft.	17.00
Highbush Cranberry, 2 to 3 ft.	35.00
Regel Privet, 18 to 24 ins.	22.00
Rose Acacia, 2 to 3 ft.	25.00
Grafted Plants	
Syringa Virginalis, 2 to 3 ft.	38.00
Weigela Eva Rathke, 18 to 24 ins.	25.00
Weigela Rosea, 2 to 3 ft.	20.00

All material bare-root. Boxed at cost. F.O.B. Newark, N. Y. Usual credit terms.

C. W. STUART & CO.
NEWARK, Wayne County, NEW YORK

"True Varieties" Is Not a Boast... It's A HABIT!
ROSEBUSHES
Licensed Grower,
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Introductions.
Refrigeration.
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PECAN TREES
WALNUT, FIG
PERSIMMON
Wholesale Catalog.
AVOID HEELYARD HAVOC. GET YOURS FIELD-FRESH AND FREEZE-FREE.

EVERGREEN SEEDLINGS

	Per 100	Per 1000
Juniperus virginiana, 2-yr., 3 to 6 ins.	$ 3.00	$ 20.00
2-yr., 6 to 10 ins.	5.50	45.00
Picea excelsa, 2-yr., 4 to 7 ins.	3.50	25.00
Picea pungens, 2-yr., 2 to 4 ins.	3.50	25.00
Pinus densiflora, 2-yr., 4 to 7 ins.	4.00	30.00
Pinus nigra, 2-yr., 3 to 6 ins.	4.00	30.00
***Pinus sylvestris,** 2-yr., 4 to 8 ins.	3.50	25.00
(This lot green in winter.)		
***Taxus cuspidata capitata,** 2-yr., 2 to 5 ins.	12.00	100.00
Thuja occidentalis, 2-yr., 2 to 4 ins.	3.00	20.00
Thuja occidentalis, 3-yr., 3 to 6 ins.	4.00	30.00

EVERGREEN TRANSPLANTS

These transplants are out of field rows, not beds.

	Per 100	Per 1000
Abies douglasi, 4-yr., T, 4 to 7 ins.	10.00	80.00
Calluna vulgaris, 2-yr. T, 2 to 4 ins.	7.00	60.00
Picea glauca densata, 6-yr. T, 6 to 10 ins.	20.00	175.00
Picea glauca densata, 6-yr. TT, 4 to 8 ins.	17.50	150.00
Retinospora plumosa flavescens, 2-yr. T, 4 to 7 ins.	25.00	200.00
Taxus baccata repandens, 2-yr. T, 4 to 8 ins.	25.00	200.00
Taxus baccata repandens, 2-yr. T, 8 to 12 ins.	32.50	275.00
Taxus baccata wymani, 2-yr. T, 8 to 12 ins.	32.50	275.00
***Taxus cuspidata,** 2-yr. T, 8 to 12 ins.	30.00	250.00
***Taxus cuspidata,** 2-yr. T, 12 to 15 ins.	35.00	300.00
Taxus cuspidata capitata, 2-yr., T, 8 to 12 ins.	45.00	400.00
Taxus intermedia (Slow strain), 2-yr. T, 6 to 12 ins.	35.00	300.00
Taxus intermedia (Fast strain), 2-yr. T, 6 to 12 ins.	35.00	300.00
Taxus intermedia (Vase type), 4-yr. TT, 6 to 10 ins.	40.00	350.00
Taxus media andersoni, 2-yr. T, 8 to 12 ins.	25.00	200.00
Taxus media andersoni, 2-yr. T, 12 to 15 ins.	32.50	275.00
Taxus media browni—This is the compact, slow-growing, hardy strain, not the Eastern strain.		
Taxus media browni, 2-yr T, 6 to 9 ins.	25.00	200.00
Taxus media browni, 2-yr. T, 9 to 12 ins.	32.50	275.00
Taxus media browni, 4-yr. TT, 6 to 8 ins.	40.00	350.00
Taxus media hicksi, 2-yr. T, 8 to 12 ins.	32.50	275.00
Taxus media kelseyi, 2-yr. T, 6 to 12 ins.	32.50	275.00
Taxus media pyramidalis, 2-yr., T, 6 to 12 ins.	30.00	250.00
Taxus media wardi, 2-yr. T, 6 to 12 ins.	35.00	300.00
Thuja occ. hoveyi, 2-yr. T, 6 to 10 ins.	25.00	200.00
Thuja occ. recurva nana, 2-yr. T, 5 to 8 ins.	25.00	200.00
Thuja occ. woodwardi, 2-yr. T, 6 to 9 ins.	30.00	250.00

DECIDUOUS LINERS

	Per 100	Per 1000
***Acer palmatum,** 1-yr. S, 3 to 6 ins.	4.00	30.00
***Castanea mollissima,** 1-yr. S, 6 to 12 ins.	9.00	75.00
Castanea mollissima, 1-yr. S, 12 to 18 ins.	16.00	140.00
Fagus americana, 2-yr. S, 12 to 18 ins.	10.00	85.00
Ginkgo biloba, 2-yr. S, 6 to 12 ins.	7.50	60.00
Larix leptolepis, 2-yr. S, 6 to 10 ins.	4.50	35.00
Larix leptolepis, 2-yr. S, 10 to 15 ins.	7.50	60.00
Populus nigra, 1-yr. R.C., 2 to 3 ft.	6.00	50.00
Populus nigra, 1-yr. R.C., 3 to 4 ft.	8.50	75.00
Populus nigra, 1-yr. R.C., 4 to 5 ft.	11.50	100.00
Salix salamoni, R.C., 3 to 4 ft.	8.50	70.00
***Ampelopsis tricuspidata,** 1-yr. S, 6 to 12 ins.	4.00	30.00
Aralia pentaphylla, R.C., 6 to 12 ins.	7.00	60.00
Azalea malvatica Kathleen, TT; 5 to 8 ins.	32.50	275.00
Azalea Yodogawa, TT, 5 to 8 ins.	27.50	225.00
Azalea vuykiana Beethoven, TT, 5 to 8 ins.	35.00	....
Berberis thunbergi, 2-yr. S, 6 to 9 ins.	3.00	20.00
Cornus stolonifera lutea, R.C., 10 to 15 ins.	6.00	50.00
Euonymus radicans vegetus, 1-yr. T, R.C., 6 to 9 ins.	15.00	135.00
Euonymus sieboldianus, 1-yr. R.C., T, 8 to 12 ins.	13.50	120.00
Forsythia spectabilis, R.C., 8 to 12 ins.	3.50	25.00
***Forsythia spectabilis,** R.C., 12 to 18 ins.	5.00	40.00
Forsythia spectabilis, R.C., 18 to 24 ins.	7.50	60.00
Ligustrum ibota, 1-yr. S, 6 to 12 ins.	2.50	15.00
Lonicera morrowi, Red-fruited, R.C., 12 to 24 ins.	6.00	50.00
Lonicera morrowi, yellow-fruited, R.C., 12 to 24 ins.	6.00	50.00
Philadelphus virginalis, R.C., 10 to 15 ins.	10.00	85.00
Rosa rugosa, 1-yr., S, 6 to 12 ins.	3.50	25.00
Rosa wichuraiana, 1-yr. S, 6 to 12 ins.	3.50	25.00
Spiraea vanhouttei, R.C., 12 to 18 ins.	5.00	40.00
Symphoricarpos chenaulti, R.C., 12 to 18 ins.	4.50	35.00
Viburnum lentago, 1-yr. S, 6 to 12 ins.	4.00	30.00

*Less 10 per cent in lots of 5000 or more.

FAIRVIEW EVERGREEN NURSERIES,
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BROAD-LEAVED EVERGREENS

Well grown, heavy, well filled.

Various varieties of:

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Ilex
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Nandina
Pyracantha

CONIFERS

Baker, Globe, Pyramidal Arborvitae, Pfitzer Juniper

Your List Gladly Quoted.

LINDLEY NURSERIES, Inc.
Greensboro, N. C.

terest in the Nursery Industry." The remainder of the afternoon program will be given by the American Association of Nurserymen and will include a talk on the "Plant America" program, by Howard P. Quadland, director of information, New York, and another on "New A. A. N. Activities," by John B. Wight, vice-president, Cairo, Ga. Immediately following, the Tennessee A. A. N. chapter will hold a meeting.

President Potter will be toastmaster at the banquet Thursday evening at 7 o'clock. Entertainment will be given by Charles Andrews, humorous cartoonist, and music will be furnished by the Tennessee Dewdrops. Later that night there will be a Yellow Dog smoker, with John Fraser, Jr., and Henry Homer Chase, officiating.

Friday the program will be resumed at 9:30 a. m. with a talk on "Recent Developments in the Agricultural College and What Is Its Program for Us," by Dr. N. D. Peacock, vice-dean of the college of agriculture, University of Tennessee. Prof. Fred C. Galle, of the department of horticulture, will tell "What the Nurserymen's Association Can Do to Help My Department." Open panel discussions will be led by Hubert Nicholson, sales manager of the Southern Nursery & Landscape Co., Winchester, on each of the following 5-minute talks: "Effects of the Extreme Weather on Inventories," by Thomas Nicholson; "Hardier Types of Ornamental Plants for Tennessee," by Thomas Faulkner; "The Fruit Tree Market or Outlook," by Hoskins Shadow; "New Demands for Plant Materials," by David Cartwright; "Labor Short Cuts," by John T. Boyd," and "The Newest in Laborsaving Machinery," by Joe N. Howell.

After a talk on "Commercial Spraying under Tennessee Pest Control Law," by Carl H. Ticer, supervisor of pest control operators, a scholarship award will be presented by the Tennessee Federation of Garden Clubs, by Mrs. Howard Bonsor, chairman of scholarship award. The nurserymen will be represented by Joe N. Howell. A business meeting will conclude the convention.

OREGON PROGRAM.

Committee reports will be the main order of business at the February 1 midwinter meeting of the Oregon Association of Nurserymen at the Heathman hotel, Portland.

Following a call to order by President Sigward Edstrom, committee reports will be given on legislation, by Max Horand; quarantine, by Pete Nuffer; transportation, by Wayne McGill, and membership, by Robert Walker. The treasurer's report will be submitted by Lynn Brooks. A discussion on the work of the horticulture chemical control committee will be given by Bert Miller, chairman, with emphasis on the 2,4-D damage problem and its solution. Another report on the work of the Oregon Bulb, Florist and Nursery Council will be given by Wayne Melott, council chairman. The two final reports that morning will be devoted to market development and publicity, by Mr. Melott, chairman, and Henry Morton, publicity director, and a discussion of the midwinter nurserymen's meetings at Chicago, by E. (Mike) Dering.

During the luncheon in the hotel's Georgian room, the guest speaker, Dr. Roberto Hooker, professor of international relations at Pacific University, Forest Grove, Ore., will talk on "Let Us Look South."

The afternoon session will be devoted to a panel discussion on the present status of nursery research projects at Oregon State College, Corvallis. The participants, all from the college, will be F. Earl Price, dean of the school of agriculture and director of the agricultural experiment station; R. S. Besse, associate director of the station; Prof. Henry Hartman, head of the department of horticulture; Dr. S. M. Dietz, head of the department of botany and plant pathology, and Dr. Don C. Mote, head of the department of entomology. Chapter 12 of the American Association of Nurserymen will meet at the conclusion of the panel discussion.

MIDWEST SHADE TREE CONFERENCE PROGRAM.

More than 300 persons interested in the maintenance and preservation of trees and shrubs are expected to attend the sixth annual meeting of the midwestern chapter of the National Shade Tree Conference February 14 to 16 at the Hotel La Salle, Chicago.

The educational program will be opened Wednesday at 11 a. m. with a welcoming address by Richard K. Alman, president of the chapter. Four talks are scheduled for the day's program, "Gas Injury to Trees and Shrubs," by Carl Fenner, assistant city forester, Lansing, Mich.; "Mosquito and Fly Control with Chemicals," by Thomas J. Lynch, arborist, Winnetka, Ill.; "The Arborists' Job," by Harlow B. Mills, chief,

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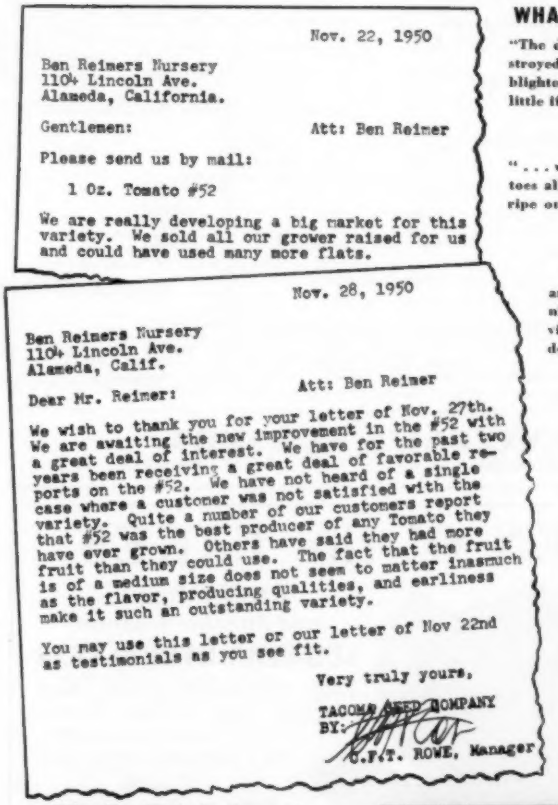
Your TOMATO Plant Sales

Make Friends and More Profits

with the NEW IMPROVED TOMATO No. 52.

Yes, you can make more profits with the New Improved *Tomato No. 52.* The increasing demand for it has demonstrated this; so for the first time, we are offering it at wholesale. Nurseries are constantly telling us they are selling more and more *Tomato No. 52* (see letter reproduced).

Another typical letter by Harold Johnson, Homestead Nursery & Floral, Redman, Washington, says, "Had excellent luck again last year with the 52's. They ripened earlier than the four other varieties. Better flavor and more tomatoes. My customers buy more No. 52 plants than all others combined." Now, you can have this *Tomato.*



Nov. 22, 1950

Ben Reimers Nursery
1104 Lincoln Ave.
Alameda, California.

Gentlemen: Att: Ben Reimer

Please send us by mail:

1 Oz. Tomato #52

We are really developing a big market for this variety. We sold all our grower raised for us and could have used many more flats.

Nov. 28, 1950

Ben Reimers Nursery
1104 Lincoln Ave.
Alameda, Calif.

Att: Ben Reimer

Dear Mr. Reimer:

We wish to thank you for your letter of Nov. 27th.
We are awaiting the new improvement in the #52 with
a great deal of interest. We have for the past two
years been receiving a great deal of favorable re-
ports on the #52. We have not heard of a single
case where a customer was not satisfied with the
variety. Quite a number of our customers report
that #52 was the best producer of any Tomato they
have ever grown. Others have said they had more
fruit than they could use. The fact that the fruit
is of a medium size does not seem to matter inasmuch
as the flavor, producing qualities, and earliness
make it such an outstanding variety.

You may use this letter or our letter of Nov 22nd as testimonials as you see fit.

Very truly yours,

TACOMA SEED COMPANY
BY:
C.F.T. ROWE, Manager

WHAT GARDENERS SAY:

"The dividing row had to be destroyed as every plant was badly blighted, while No. 52 showed little if any evidence of blight."
Vernon, Wash.

" . . . we were kept in fresh tomatoes all year, and I even picked 4 ripe ones on February 15."
Stinson Beach, Calif.

"I live right on the water and have exceptionally cold nights all summer; still the vines were loaded with delicious fruit."
Vashon Island, Wash.

". . . set an abundance of blossoms, then we had a 12 day period of 103° . . . still sold 110 lbs."
Austin, Texas

". . . had the grandest crop ever from 18 plants. Canned 35 qts., made 45 qts. juice, all the chili sauce and tomato catsup I needed. Gave some away, and sold a few boxes."
Santa Monica, Calif.

As Advertised in Sunset.

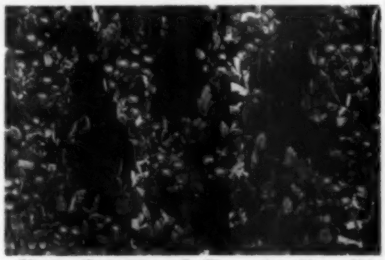
Why No. 52 Is in Demand

Tomato No. 52 is the result of crossing a small cluster tomato with the John Baer to improve size. The result is a tomato that will withstand cold, foggy weather as well as hot climates. It is ideal in high altitudes and in short season areas. This means a longer fruiting season, and more fruit. The fruit is remarkably free from hard fibrous cores.

Tomato No. 52 is particularly free from blight. It is such an early bloomer that it is ideal to grow in veneer bands, or sell in pots at premium prices. Your customers will be delighted because they lose fewer plants when setting them out. And this means repeat sales.

Order your Tomato No. 52 seeds now for early delivery, ppd.
1/4 oz., **$2.50;** 1/2 oz., **$3.50;**
oz. (approximately 7000 seeds),
$6.00.

BEN REIMERS
1113 Lincoln Avenue
ALAMEDA, CALIFORNIA



New, Improved Tomato No. 52

Tested in home gardens all over the West, No. 52 was successfully grown on Vashon Island, Wash.; Alcatraz Island, S. F. Bay, San Diego and high altitudes. It is especially adapted to cold, foggy conditions. Extra-early. Fruit medium size, smooth, solid. Disease-resistant; wilt and blight practically unknown. Wherever you are, No. 52 will do better.

OUR COMPLETE PRICE LIST

		Per 100
	Prunus,	
300	**Thundercloud,** 18 to 24 ins.	$ 45.00
300	**Thundercloud,** 2 to 3 ft.	55.00
300	**Newport,** 12 to 18 ins.	40.00
100	**Malus Eleyi,** 2 to 3 ft.	60.00
100	**Scotch Broom,** 12 to 18 ins.	20.00
100,000	**Calif. Privet,** cuttings. $3.75 per 1000.	
3000	**Pink Dogwood,** well branched, 2 to 3 ft.	150.00
1000	**Thuja orientalis compacta,** 2-yr., 3 to 5 ins.	8.00
500	**American Bittersweet,** 12 to 18 ins.	10.00
1000	**Spiraea callosa,** pink, 12 to 18 ins.	12.00
100	**Pawpaw,** 2 to 3 ft.	27.00
200	**Jap. Snowball,** 18 to 24 ins.	45.00
250	**Sycamore** (Plane tree), 12 to 24 ins.	9.00
3000	**Norway Spruce,** 3-yr.	6.00
100	**Tamarix Hispida,** 18 to 24 ins.	18.00
100	**Pyracantha Pauciflora,** 1-yr., hvy.	18.00
5000	**Pink Almond,** heavy liners, 12 to 18 ins.	22.50
	Double Red-flowering Peach,	
1000	12 to 18 ins.	25.00
1000	18 to 24 ins.	30.00
5000	**American Arborvitae,** sdlgs., 6 to 9 ins.	6.00
5000	**Canadian Hemlock,** sdlgs., 6 to 9 ins.	6.00
5000	**Balsam Fir,** sdlgs., 6 to 9 ins.	6.00
	Abelia Grandiflora,	
1000	12 to 18 ins.	22.00
100	18 to 24 ins.	30.00
250	**Spiraea arguta,** 12 to 18 ins.	12.00
500	**Spiraea thunbergi,** 12 to 18 ins.	12.00
500	**Peegee Hydrangea,** 12 to 18 ins.	16.00
250	**American Holly,** transplants, 9 to 12 ins., XX	22.00
100	**Red Cedar,** tr., 9 to 15 ins., XX	22.00

		Per 100
	Canadensis Hemlocks	
250	collected, 12 to 18 ins.	$ 8.00
1000	collected, 9 to 12 ins.	6.00
1000	transplants, 12 to 18 ins.	25.00
1000	transplants, 9 to 12 ins.	20.00
1000	transplants, 6 to 9 ins.	13.00
	White Dogwood,	
1000	sdlgs., 12 to 18 ins.	13.50
1000	sdlgs., 18 to 24 ins.	16.00
250	**White Dogwood,** collected, 3 to 4 ft.	35.00
8000	**European Larch,** liners, 8 to 15 ins.	12.00
500	**Paul's Scarlet Roses,** liners	25.00
1000	**Colo. Spruce** (pungens glauca), 8 to 10 ins.	12.00
100	**European Nut Ash,** 2 to 3 ft.	50.00
100	**European Nut Ash,** 12 to 24 ins.	25.00
100	**White Birch,** 10 to 18 ins.	17.50
1000	**Red Beech,** 18 to 24 ins.	45.00
1000	**Magnolia nigra,** 12 to 18 ins.	65.00
1000	**Magnolia nigra,** 18 to 24 ins.	80.00
100	**Red Crape Myrtle,** 3 to 4 ft.	95.00
100	**Flowering Cherry,** upright, 2 to 3 ft.	65.00
800	**Tamarix africana,** 12 to 18 ins.	18.00
	Weigela Eva Rathke,	
250	grafts, red, 15 to 18 ins.	25.00
200	grafts, red, 9 to 12 ins.	22.00
50	**Weigela vaniceki,** grafts, 9 to 12 ins.	22.00
	Azalea Liners,	
2000	**Snow,** 4 to 6 ins.	18.00
2000	**Hinodegiri,** 4 to 6 ins.	18.00
2000	**Salmon Beauty,** 4 to 6 ins.	18.00

This is our complete price list. All orders accepted from this advertisement. Please send your deposit of 25 per cent in now to hold your order until shipping time, as we may be sold out later. All orders can be shipped in March, April and May.

Our nursery will be open to local truckers beginning February 25

We will have many balled and burlapped items at that time of the year, such as **Norway Spruce,** 3 to 6 ft.; **Juniperus Stricta,** 1 to 3 ft.; **Biota,** 1 to 2 ft.; **Weeping Willows,** 6 to 8 ft.; **Shade Trees, Elms, Maples** (2-in.). **White Birch, Poplars.** Also **Hedges, Flowering Shrubs** of all sizes, **Leaf Mold** and **Manure.**

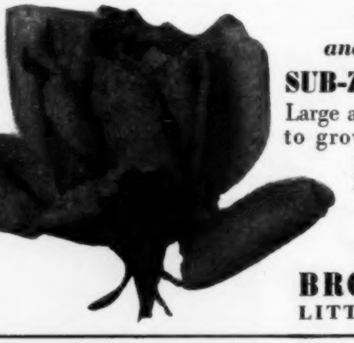
Kindly send me your Price Lists, all of you.

At the same address over 44 years.

WENTZELL'S NURSERY

13 Miles from Philadelphia. **SEWELL, N. J.**

QUEEN O' the LAKES



(Dark Velvety)

and 30 other fragrant

SUB-ZERO HYBRID TEAS

Large and beautiful as any. Easy to grow; long to live. Bloom more; more constantly. Save replacement expense.

Also 20

Yellow and Orange Climbers

Write for trade prices to

BROWNELL ROSES

LITTLE COMPTON, R. I.

Trees, Evergreens, Shrubs
Fruit Trees

Write for Our Wholesale Trade List

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Telephone 2689 **GENEVA, N. Y.**

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Growers and Distributors of

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60 acres growing. **Skaneateles, N. Y.**

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Headquarters for Quality
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POTTED LINERS
FIELD LINERS
GRAFTS
(Beetle Certified)
HEASLEY'S NURSERIES
Freeport Rd. BUTLER, PA.

Illinois Natural History Survey, Urbana, Ill., and "Turf Management in Tree Areas," by William H. Daniel, department of agronomy, Purdue University, Lafayette, Ind. A panel discussion at the same session will deal with the question, "Is Contract Work Advantageous to the Arborist?" Archibald Enoch Price, arborist, Glenview, Ill., will take the affirmative and Vance I. Shield, arborist, Clayton, Mo., the negative.

Four talks on Thursday will be devoted to "Developments in Oak Wilt Research," by James E. Kuntz, department of plant pathology, University of Wisconsin, Madison, Wis.; "Some Aspects of the Use of 2,4-D in Arboriculture," by B. H. Grigsby, department of botany and plant pathology, Michigan State College, East Lansing, Mich.; "Dutch Elm Disease and Control Measures," by Roger U. Swingle, division of forest pathology, United States Department of Agriculture, Columbus, O., and "Liquid Feeding of Trees," by S. W. Parmenter, arborist, Kent, O.

A panel discussion entitled "Stump the Plant Experts" will be conducted by August P. Beilmann, botanist, Missouri Botanical Garden, Gray Summit, Mo.; C. L. Wachtel, arborist, Wauwatosa, Wis.; Forrest C. Strong, pathologist, Michigan State College, East Lansing, Mich., and J. E. Bussart, entomologist, Velsicol Corp., Chicago. Paul E. Tilford, executive secretary, National Arborist Association, Wooster, O., will be the moderator.

Following a talk on "Scale Insects and Control Methods" by Mr. Bussart, the annual banquet will be held, with Karl Dressel, department of forestry, Michigan State College, East Lansing, Mich., as toastmaster. There will be a special program for ladies Thursday.

Two talks and a plant clinic will be on Friday's program. The talks will be on "Small Trees for City and Home Planting," by Edward H. Scanlon, editor, Trees magazine, Cleveland, O., and "Care of Fruit Trees," by J. C. McDaniel, department of horticulture, University of Illinois, Urbana. The clinic will be conducted by Alfred F. Carlstrom, Chicago park district, Chicago. A film on "Miracle of the Trees" also will be shown by John Nash Ott, Jr., John Ott Pictures, Inc., Winnetka, Ill.

FLORIDA CAMELLIA SHOW.

Originally scheduled for January 13 and 14, the third annual Florida state camellia show has been post-

REMEMBER THIS in planning your 1951 garden business:

A Product of Swift
VIGORO
Complete Plant Food
VIGORO

VIGORO*

has made
MORE PROFITS
for MORE DEALERS
for MORE YEARS
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VIGORO sells faster—sells easier—because it's *preferred by more people than all other brands combined!*

*There is *only one* Vigoro . . . the trade-mark for Swift & Company's complete, balanced plant food.

PRESENTED BY **SWIFT & COMPANY**
Plant Food Division, U. S. Yards, Chicago 9, Illinois

Let the power of the Vigoro name help you sell these two companion products:

End-o-Pest
VIGORO

END-O-PEST
All-purpose dust that provides the 3-way protection every garden needs!

END-O-WEED
Improved lawn weed control that kills over 100 different kinds of weeds!

poned to February 1 and 2 because of the weather. The show is being staged at the Municipal Auditorium, Orlando, by the Camellia Society of Central Florida in cooperation with the American Camellia Society and the Florida State Florists' and Nurserymen's Association. M. J. Daetwyler, Daetwyler Nurseries, Orlando, is on the executive committee and the staging committee.

SPRING FLOWER SHOWS.

The months of February, March and April will bring the annual spring flower shows to many cities from coast to coast. The earliest of these will be the Cleveland spring flower show, at Cleveland, O., February 24 to March 4.

The other shows scheduled, by order of date, will include the western Massachusetts flower show, at the Industrial Arts building, Eastern States Exposition grounds, at West Springfield, Mass., March 1 to 6; National flower show, at Baltimore, Md., March 3 to 10; California international flower show, Hollywood Park Turf Club, at Inglewood, Calif., March 3 to 11; International flower show, Grand Central Palace, at New York City, N. Y., March 3 to 10; spring flower show, at Philadelphia,

LINING-OUT STOCK

	Per 100
Cornus Florida, 1-yr. sdlgs. grafting size	$ 6.00
Cotoneaster Dielsiana, 1-yr. sdlgs.	15.00
Cotoneaster Divaricata, 1-yr. sdlgs., 6 to 10 ins.	10.00
Cotoneaster Horizontalis, 1-yr. sdlgs.	12.00
Fagus Sylvatica Riversi (Rivers Purple Beech), 2-yr. grafts, 10 to 15 ins.	125.00
Juniper, Hill's Pyramidiformis, 1-yr. grafts, 8 to 12 ins.	65.00
Juniper, Keteleeri, 1-yr. grafts, 8 to 12 ins.	65.00
Juniper, Meyeri, 1-yr. grafts, 8 to 12 ins.	65.00
Lilac, 2-yr. grafts, in variety, SPECIAL	25.00
Magnolia Soulangeana, 2-yr. tr. cuttings, 12 to 18 ins.	75.00
Prunus Tomentosum, 1-yr. tr., 10 to 18 ins.	15.00
Thuja Pyramidalis, 1-yr. grafts, 10 to 15 ins.	50.00
Thuja Pyramidalis, 2-yr. grafts, 18 to 24 ins.	75.00
Viburnum Burkwoodi, heavy 1-yr. tr. cuttings	60.00
Vitex Macrophylla (true), 1-yr. tr.	25.00
Wistaria Chinensis (blue), 2-yr. grafts	50.00
Wistaria Rosea (pink), 2-yr. grafts	50.00

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VERKADE'S NURSERIES NEW LONDON, CONN.

Pa., March 5 to 10; spring flower show, at Hartford, Conn., March 8 to 13; spring flower show, Mechanics building, at Boston, Mass., March 11 to 17; spring flower show at St. Louis, Mo., March 13 to 18, and spring flower show, at Detroit, Mich., March 31 to April 8.

WASHINGTON BULB COURSE.

Dates for the fourth bulb growers' short course, to be held at Fruitland Grange Hall, Puyallup, Wash., have been set for February 27 and 28. The course will be held in cooperation with the western Washington experiment station, the Northwest Bulb Growers' Association, the extension service of the State College of Washington, Pullman, and the state department of agriculture.

Twelve talks have been scheduled for the 2-day program. A banquet will be held Tuesday night, with entertainment to be provided by British Columbia bulb growers. A bulb clinic will be held Wednesday afternoon. Vernon Miller, chemist at the western Washington experiment station, is in charge of plans for the short course.

NEW YORK COURSE IN NURSERY MANAGEMENT.

The New York State Agricultural and Technical Institute, at Alfred, in Alleghany county, in southwestern New York, offers, among its various courses in floriculture, training in flower shop management, greenhouse management and nursery management. An advisory committee composed of leading nurserymen in western New York aids the floriculture department in planning the nursery management curriculum so that students will obtain the background and knowledge that their future employers desire them to have.

The course extends over a 2½-year period, with six months of school work and six months of field work each year, with the exception of one summer, when a 6-week session is devoted to instruction in woody and herbaceous plant materials in their summer conditions. The curriculum also includes courses in plant propagation, landscape design, nursery management, ornamental plant diseases, soil technology, plant science, marketing and business. The curriculum is set up so that the students are free from March through mid-September to work in nurseries. In most other schools students do not start their summer recess until mid-June, so

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English Box, 2 to 3 ins., T	7.50
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American Box, 3 to 4 ins.	7.50
4 to 6 ins.	10.00
6 to 8 ins.	15.00
Ilex Bullata, 4 to 6 ins., 2-yr. T	15.00
6 to 8 ins., T	20.00
Ilex Crenata, 4 to 6 ins., 2-yr., T	15.00
6 to 8 ins., T	20.00
Leucothoe Catesbaei, 6 to 8 ins., T	15.00

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NESHAMINY, Bucks Co., PA.

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Azalea
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Niagara, 1-1	9.00	70.00
Catawba, 2-1	11.00	90.00
Catawba, 1-1	9.00	70.00
Fredonia, 2-1	11.00	90.00
Fredonia, 1-1	9.00	70.00
Delaware, 2-1	14.00	120.00
Delaware, 1-1	11.00	90.00
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Red Lake, 2-yr. No. 1	16.00	....
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GOOSEBERRIES		
Downing, 2-yr. No. 1	25.00	....
Houghton, 2-yr. No. 1	25.00	....
Champion, 2-yr. No. 1	25.00	....

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Prices of Rancocas, Rubel, Jersey

	Each	Per 10	Per 100	Per 1000
2-yr., 9 to 12 ins., bearing age	$0.40	$3.50	$32.50	$300.00
3-yr., 12 to 18 ins., bearing age	.55	5.00	47.50	450.00
4-yr., 18 to 24 ins., bearing age	.75	7.00	67.50	650.00

RED RASPBERRIES	Per 100	Per 1000
Latham, transplants	$ 7.50	....
Latham, 1-yr. No. 1	6.00	....
Chief, transplants	7.00	$ 60.00
Chief, 1-yr. No. 1	5.50	45.00
Sunrise, transplants	7.00	60.00
Sunrise, 1-yr. No. 1	5.50	45.00
Indian Summer, transplants	8.00	70.00
Indian Summer, 1-yr. No. 1	6.50	55.00
St. Regis, transplants	7.00	60.00
St. Regis, 1-yr. No. 1	5.50	45.00
BLACK RASPBERRIES		
Cumberland, trans., No. 1	8.00	70.00
Cumberland, trans., No. 2	6.50	55.00
Cumberland, Tips, No. 1	4.50	35.00
Logan, trans., No. 1	8.00	70.00
Logan, trans., No. 2	6.50	55.00
Logan, tips, No. 1	4.50	35.00
Morrison, trans., No. 1	9.00	80.00
Morrison, trans., No. 2	7.50	65.00
Morrison, tips, No. 1	5.00	40.00
PURPLE RASPBERRIES		
Sodus, No. 1, tips	5.50	45.00
ASPARAGUS		
Paradise and Washington		
3-yr. heavy	4.00	30.00
2-yr. No. 1	2.30	18.00
1-yr. No. 1	1.70	12.00
VICTORIA RHUBARB		
Whole Roots		
1½-in. and up	8.00	75.00
1 to 1½-in.	5.50	50.00
¾ to 1-in.	4.00	35.00
½ to ¾-in.	3.00	25.00
RED RHUBARB		
Canada Red, No. 1 divisions	40.00	350.00
McDonald, No. 1 divisions	30.00	250.00
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Cuttings, 4 to 6 ins.	3.00	20.00
Whole Roots	5.00	40.00

Write for Special Quotations on Quantity Lots.

that they are not available to work in nurseries during the busy spring season.

At present the nursery division has ample bench area for propagation in one of the school's three greenhouses. A nursery of about one acre containing many kinds of specimen plants is maintained by the students. At intervals each student is given the opportunity to be nursery manager. This next spring work will begin to expand the nursery to about three acres to give additional space for seedbeds, coldframes, hotbeds and a lath house.

U. S. PLANT EXPORTS.

During 1949 the United States exported $286,454 worth of bulbs, corms, pips, tubers, rhizomes and roots; 377,100 fruit trees of all types which had a declared value of $181,050, and $457,740 worth of other nursery stock and greenhouse stock not elsewhere specified.

Exports of all nursery and greenhouse stock during the first six months of 1950 had a declared value of $681,853. Canada and Mexico are the two major importing countries, with Canada leading six to one in dollar value of imports from the United States.

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COMPACTA ERECTA
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Specializing in the propagation of grafted lining-out stock of all kinds. Write for our new list of lining-out stock.

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HEAVY FIELD LINERS

SPRING, 1951

1,000,000 transplanted liners; 2, 3 and 4 years in field beds. X indicates times transplanted. Not less than 25 of a variety at the 100 rate. Shipment by express only. Terms: Cash with order and packing free; otherwise, 1/3 deposit with order and balance C.O.D. and packing charged. Japanese beetle certification upon request.

	100 rate each
Azalea mollis, 10 to 15 ins., XXX, 3-yr.	$0.90
Azalea kaempferi, 9 to 12 ins., XXX, 3-yr.	.65
Chamaecyparis lawsoniana, 8 to 12 ins., 2-yr.	.10
Chamaecyparis laws. pendula, 10 to 15 ins., 3-yr.	.15
Chamaecyparis laws. allumi, 10 to 15 ins., XX, 2-yr.	.22
Chamaecyparis filifera aurea, 6 to 12 ins., X, 2-yr.	.25
Cytisus scoparius, X, 3-yr.	.20
Euonymus carrierei, 6 to 12 ins., XX, 2-yr.	.22
Euonymus coloratus, 6 to 12 ins., XX, 2-yr.	.22
Euonymus fortunei erectus, 8 to 15 ins., XX, 2-yr.	.20
12 to 18 ins., XXX, 3-yr.	.35
Euonymus vegetus, 6 to 8 ins., X, 2-yr.	.20
Euonymus vegetus, 8 to 15 ins., XX, 2-yr.	.25
Ilex crenata, 4 to 6 ins., XX, 2-yr.	.22
5 to 10 ins., XX, 3-yr.	.35
Ilex crenata bullata, 4 to 6 ins., XX, 2-yr.	.20
6 to 8 ins., XX, 2-yr.	.25
Ilex glabra, 6 to 10 ins., XX, 2-yr.	.30
XXX, 12 to 15 ins., 4-yr.	1.00
Ilex rotundifolia, 4 to 6 ins., XX, 2-yr.	.20
6 to 8 ins., XX, 2-yr.	.25
Juniper, Andorra, 6 to 9 ins., XX, 2-yr.	.25
9 to 12 ins., XX, 2-yr.	.35
Juniperus can. aurea, 5 to 8 ins., XX, 2-yr.	.25
Juniperus glauca hetzi, 10 to 15 ins., XX, 2-yr.	.35
12 to 18 ins., XXX, 3-yr.	.50
Juniperus gl. hetzi, 8 to 10 ins., X, 2-yr.	.25
Koelreuteria paniculata, 15 to 20 ins., 2-yr.	.25
Larix europaea, 12 to 24 ins., 3-yr.	.18
Leucothoe catesbaei, 4 to 6 ins., XX, 3-yr.	.25
6 to 10 ins., XX, 3-yr.	.35
Picea excelsa, 4 to 10 ins., 2-yr.	.10
Pieris japonica, 6 to 8 ins., XX, 2-yr.	.45
Pinus mughus, 2 to 3 ins., 2-yr.	.08
Pinus mughus, 3 to 6 ins., X, 3-yr.	.15
Pinus nigra, 6 to 10 ins., 2-yr.	.10
Pinus strobus, 4 to 8 ins., 2-yr.	.08
Pinus sylvestris, 4 to 8 ins., 2-yr.	.08
Pyracantha lalandi, 6 to 12 ins., X, 2-yr.	.20
Quercus palustris, 6 to 12 ins., 2-yr.	.10
Quercus palustris, 12 to 24 ins., 2-yr.	.15
Rhododendron hybrid, 5 to 8 ins., XXX, 3-yr.	.55
Rhododendron hybrid, 8 to 12 ins., XXX, 3-yr.	.85
Sophora japonica, 1-yr. sdlg.	.08
Taxus capitata, 6 to 8 ins., XX, 3-yr.	.25
Taxus cuspidata, 6 to 10 ins., XX, 2-yr.	.25
10 to 15 ins., XX, 3-yr.	.35
Taxus media hatfieldi, 4 to 6 ins., XX, 2-yr.	.18
6 to 8 ins., XX, 2-yr.	.25
Taxus media hicksi, 4 to 6 ins., XX, 2-yr.	.18
6 to 8 ins., XX, 2-yr.	.25
Thuja occidentalis, sdlg., 4 to 6 ins., 2-yr.	.10
6 to 12 ins., XX, 3-yr.	.20
Thuja occ. elegantissima lutea, 6 to 8 ins., XX, 2-yr.	.25
Thuja occ. globosa, XX, 6 to 8 ins., 2-yr.	.25
Thuja occ. globosa nana, 4 to 6 ins., XX, 2-yr.	.25
Thuja orientalis, 6 to 12 ins., 2-yr.	.10
Tsuga canadensis, 6 to 8 ins., XX, 3-yr.	.20
8 to 12 ins., XX, 3-yr.	.25
Viburnum opulus, 12 to 24 ins., 2-yr.	.18

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PALLACK BROS. NURSERIES, Inc.

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R.F.D. 1, HARMONY, PA.

WORCESTER COUNTY LANDSCAPERS UNITED.

Thirty-six owners and operators of landscaping firms in Worcester county, Massachusetts, organized the Worcester County Landscape Gardeners' Association in 1946 for a threefold purpose: To advance their interests and welfare, to increase their standards and skills and to increase sociability among the members. The group was organized at the suggestion of G. A. Karlson, a partner of the Karlson Co., which sells growers' supplies, and an agricultural instructor at North high school, Worcester, after he had sponsored an all-day program on landscape and nursery subjects at the annual union agricultural meeting, which drew about fifty interested nurserymen and landscape gardeners. Membership is open to professional landscape gardeners and to owners or operators of allied professional firms. Employees may become members, but are not permitted to vote. Annual dues are $3, and there is an initiation fee of $2. All members receive identification stickers for their cars and trucks.

Officers of the group are Habor N. Ball, landscape gardener at Worcester, president; John Keenen, landscape gardener at Leicester, vice-president; J. Irving Hendrickson, landscape gardener, Worcester, secretary; Lee B. Swope, Bremer Tree Expert Co., Worcester, treasurer; Gustaf Nelson, landscape gardener, Worcester, flower show chairman, and G. A. Karlson, program chairman.

Meeting monthly, the members deal with such ever-present problems as growing methods, cost estimating, the use of sprays and dusts, legislation affecting the trade and members' grievances. Speakers at the sessions are always persons well known to the trade and have included Homer K. Dodge, Landscape Service Co., Framingham, Mass.; Seth Kelsey, Kelsey-Highlands Nursery, East Boxford, Mass.; Lester Needham, Adams Nursery, Inc., Westfield, Mass., and Patsy Donofrio, Carroll Gardens, Westminster, Md. Annually, the members hold a one-day session at the union agricultural meeting in the Municipal Auditorium, Worcester. The date this year was January 11, and the speaker was Peter J. Cascio, West Hartford, Conn., director for region 1 of the American Association of Nurserymen.

One attempt at cooperative advertising has been made, somewhat un-

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	Each	Per 10
Elm, American,		
6 to 8 ft.	$1.60	$14.00
8 to 10 ft.	2.00	17.50
10 to 12 ft.	2.50	22.50
Elm, Chinese,		
5 to 6 ft.	1.10	10.00
6 to 8 ft.	1.60	14.00
8 to 10 ft.	2.00	17.50
Flowering Crab, Eleyi,		
3 to 4 ft.	.75	6.50
4 to 6 ft.	1.00	9.00
Hackberry,		
5 to 6 ft.	1.75	16.00
6 to 8 ft.	2.50	22.50
8 to 10 ft.	3.00	27.50
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8 to 10 ft.	3.00	27.50
10 to 12 ft.	4.00	37.50
Poplar, Lombardy,		
6 to 8 ft.	.85	7.50
8 to 10 ft.	1.20	10.00
10 to 12 ft.	1.60	14.00
Poplar, Bolleana,		
6 to 8 ft.	1.60	14.00
8 to 10 ft.	2.00	17.50
Texas Umbrella,		
4 to 5 ft.	1.35	12.00
5 to 6 ft.	1.75	15.00
6 to 8 ft.	2.00	17.50
Black Walnut	Per 10	Per 100
4 to 6 ft.	$ 9.00	$ 80.00
6 to 8 ft.	12.50	115.00
8 to 10 ft.	16.50	150.00
Papershell Pecan		
4 to 6 ft.	12.50	115.00
6 to 7 ft.	16.00	145.00
7 to 8 ft.	18.00	....
American Filbert		
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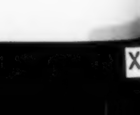

satisfactorily, but the most effective promotion has been at the local flower shows held in the fall and spring. Elaborate exhibits are shown by the landscape members, and good publicity has always resulted.

CONNECTICUT AWARD.

Each year the Connecticut Nurserymen's Association presents a $100 award to a student majoring in nursery management at the University of Connecticut. The recipient is selected on the basis of scholarship, character and participation in student activities. The 1950 award was formally announced in December at a school assembly, by A. I. Mann, director of the Ratcliffe Hicks school of agriculture at the university.

Harry Audley, of Westport, who will graduate in June, is the winner. He is secretary-treasurer of the school agricultural association, one of three student chairmen of the graduation committee, a member of the horticulture club and assistant chairman of the student horticultural show. He has had experience in landscape maintenance work on the S. M. Foster estate, at Westport.

NEW APPOINTMENTS.

Five states recently have appointed new chiefs in horticulture. They are Dr. F. F. Cowart, new director of the Georgia agricultural experiment station; Dr. R. A. Schroeder, new head of the department of horticulture at the University of Missouri, Columbia; Prof. O. B. Combs, new head of Wisconsin's department of horticulture; Dr. N. K. Ellis, appointed head of the department of horticulture, Purdue University, West Lafayette, Ind., and Dr. B. S. Pickett, head of the department of horticulture at the University of Tennessee, Knoxville.

Retiring are Prof. T. J. Talbert, who, after twenty-eight years as head of the department of horticulture at the University of Missouri, has been awarded the title of professor emeritus of horticulture, and Dr. Laurenz Green, who has given twenty-five years of service at Purdue University.

MARYLAND ADDS LANDSCAPE SPECIALIST.

Because of a greatly increased demand for counsel in problems of planting and landscape design, the University of Maryland recently added to its horticultural staff a full-time landscape extension specialist. The new member of the extension

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HEMLOCK
JUNIPERS

Single Leader, Sheared Plants of Highest Quality

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	Each
3½ to 4 ft.	**$ 8.00**
4 to 4½ ft.	**10.00**
4½ to 5 ft.	**12.00**
5 to 5½ ft.	**14.00**
5½ to 6 ft.	**16.00**
6 to 7 ft.	**20.00**

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5 to 6 ft.......... **$5.60;** 6 to 7 ft.......... **$10.00** each

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J. Hilli, 5 to 6 ft. and 6 to 7 ft.
J. Burki, 5 to 6 ft. and 6 to 7 ft.
J. Keteleeri, 6 to 7 ft. only.
5 to 6 ft....... **$5.25;** 6 to 7 ft....... **$7.00** each

Truckloads and carloads only. No packing.

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H. B. Stubblefield, *Supt.*

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We offer for Spring 1951
50,000 Juniperus Grafts
(Grafted on Red Cedar)

ORDER NOW

before certain kinds are sold out.

It's quality that counts.

Juniperus chinensis

	Per 100	Per 1000
columnaris glauca	$47.50	$450.00
keteleeri	47.50	450.00
compacta	47.50	450.00
mascula	47.50	450.00
pyramidalis	47.50	450.00

Juniperus virginiana

burki	47.50	450.00
canaerti	47.50	450.00
canaerti compacta	47.50	450.00
elegantissima Lee	47.50	450.00
glauca	47.50	450.00
schotti	47.50	450.00
pyramidalis hilli	47.50	450.00

Picea pungens

moerheimi	100.00	....

Acer polymorphum

ashi-beni (the best red)	80.00	....

Out of Pots and Beds

	Per 100	Per 1000
2000 **Juniper, Pfitzer,** 8 to 10 ins., 1-yr., 2½-in. pots	$27.50	$250.00
1000 **Juniper, Pfitzer,** 12 to 15 ins., strong, out of beds	55.00	500.00
3000 **Euonymus patens sieboldi** 10 to 15 ins., bushy, out of beds	35.00	300.00

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NURSERIES
COLUMBUS 13, OHIO

EVERGREENS
Seedlings and Transplants
For Spring, 1951
Write for price list.
SUNCREST EVERGREEN NURSERIES
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CHINESE CHESTNUT TREES
for Retailers
Blightproof Ching Chow Strains
SUNNY RIDGE NURSERY
Swarthmore, Pa.

service is Carl N. Johnson, a graduate of Michigan State College in 1948.

Before joining the staff of the University of Maryland in October, Mr. Johnson spent two and one-half years as manager of the landscape department of Stark Bros. Nurseries & Orchards Co., Louisiana, Mo.

SAGINAW VALLEY PARTY.

The Saginaw Valley Nurserymen's Association held its fourth annual banquet and Christmas party last month at the Chanticleer Inn, Saginaw, Mich. More than 100 nurserymen, their wives and friends attended. William Schlitt, Bay City, was chairman for the program and was assisted by a committee composed of Chris Burkhardt, Reece; William Schriener, Saginaw, and Reinhold Steffer, Bay City.

Lester Bejick, Bay City, was toastmaster and introduced the speaker, Harold Davidson, department of horticulture, Michigan State College, East Lansing. Other guests included Bernard Ward, East Lansing, secretary of the Michigan Association of Nurserymen, and Edward Dillon, vice-president of radio station WGRO, Bay City, who is assisting the nurserymen with a radio program called "Garden Tips."

Following the dinner, music for dancing was furnished by a 3-piece orchestra. Table decorations and corsages for the ladies were furnished by the committee.

T. R. Laetz, Sec'y.

NO-WILT CO. MERGER.

Announcement has been made by S. L. Hopperstead, director of sales, that the interests of his firm, No-Wilt Plant Products Co., North Olmsted, O., have been merged with those of the Newton Chemical & Supply Co., Bridgeville, Del. All correspondence should henceforth be directed to the latter firm.

The No-Wilt company has manufactured Plantcote, a liquid plastic horticultural spray for preventing rapid moisture loss from plants to which it is applied, and has sold spraying equipment. The Newton company is allied with C. A. Newton Son Co., also at Bridgeville, Del., and supplies insecticides, fumigants, fertilizers and hand dusting and spraying equipment.

FORMERLY located on East River road, Grand Island, N. Y., Lee John Hartman has moved the Secret Garden to 24667 Mound road, Center Line, Mich.

EVERGREEN LINERS IN PLANT BANDS

Heavy, established plants in a solid cube of dirt for field planting.

Book your order for spring.

JUNIPER, Pfitzer, Andorra, Procumbens, Swedish, Greek.
6 to 8 ins., **14½c**
8 to 10 ins., **20c**

TAXUS, cuspidata or **capitata.**
4 to 6 ins., **14½c**

EUONYMUS patens
6 to 8 ins., **14½c**

EUONYMUS coloratus
Branched field plants,
15 ins., **14½c**
Outdoor rooted cuttings, **5c**

Above prices are for 300 or more, total order. If less than 300, price is 16c instead of 14½c, 22c instead of 20c, 6c instead of 5c.

Our list on request.

McININCH GREENHOUSES
St. Joseph, Mo.

The new garden book **"Garden Guide for the Midwest"** by Stanley McLane available from **Frank Glenn Pub. Co., 197 W. 11th St., Kansas City, Mo., $3.75.**

PERENNIAL
FLOWER SEEDS
PLANTS
ROOTING POWDERS
Send for your copy of our new catalog.
Somerset
SEEDS PLANTS
New Brunswick, N. J.

FOR 52 YEARS
Our business has been growing
Rhododendrons
Azaleas
Perennials, Roses
All Nursery Items
BOBBINK & ATKINS
E. RUTHERFORD, N. J.

SPECIAL
PHILADELPHUS CORONARIUS
2 to 3 ft. and 3 to 4 ft.
Well rooted with 5 to 6 Canes
Ivan R. Congdon Nursery
North Collins, N. Y.

U. S. FORBIDS HOARDING.

An order against accumulating excessive stocks of scarce goods was issued by the National Production Authority December 28. Although consumers as well as businesses were included in the order, NPA officials said the chief effect would be on industry, because the items are largely industrial.

The order broadens an NPA ruling of September 18 directing that inventories of certain defense materials be held to the minimum of practical working level. The order carries maximum penalties, upon conviction, of a $10,000 fine and a year in prison.

The new order states that it is illegal to accumulate the listed materials "in excess of the reasonable demand of business, personal or home consumption or for the purpose of resale at prices in excess of prevailing market prices of materials, the supply of which would be threatened by such accumulation."

Among building materials are named cast-iron soil pipe and pressure pipe; gypsum board, lath and sheeting; insulation material made of pulp; insulation board which contains paper and Portland cement.

Among lumber products are listed softwood and hardwood lumber, softwood plywood and wood pulp.

Paper products include converted paper and board products, paper, paperboard, construction paper and board materials.

Various forms of iron and steel, as well as other metals, are included, and a number of chemicals.

Rubber became the first product to be exclusively purchased and distributed by the government under the stepped-up defense program.

AID MOBILIZATION.

Members of two committees of the United States Chamber of Commerce—on manufacture and trade associations—met jointly at Washington, D. C., last month to discuss with government officials the problems relating to materials and manpower in connection with the nation's mobilization effort. Robert C. Goodwin, of the Department of Labor, defense manpower executive director, outlined the manpower picture in the immediate months ahead and discussed plans for meeting manpower shortages in critical areas. Attending the meeting was Richard P. White, executive secretary of the American Association of Nurserymen, who is chairman of the chamber's trade associations committee.

LINING-OUT STOCK

		Each 10 up	Each 25 up
100	**Crimson King Maple** (Pat. No. 735), 3 to 4 ft., w.	$1.75	$1.50
		Per 100	Per 1000
5000	**Calycanthus,** 3 to 6 ins., S, 1-yr.	$ 5.00	$ 25.00
10,000	**Chaenomeles lagenaria,** 3 to 6 ins., S, 1-yr.	5.00	20.00
500	**Red Dogwood** (from isolated trees), 3 to 6 ins., S, 1-yr.	12.50	100.00
5000	**Gray Dogwood** (racemosa), 9 to 15 ins., S, 1-yr.	9.00	60.00
3000	**Forsythia spectabilis,** 1 to 2 ft., H.W.C.	8.00	50.00
*2000	**Forsythia spectabilis,** 18 to 24 ins., br., H.W.C.	12.50	100.00
*100	**Green Ash,** 5 to 6 ft., br. tr.	50.00	....
*800	**Green Ash,** 6 to 8 ft., br. tr.	70.00	600.00
*100	**Thornless Honey Locust,** 4 to 5 ft., br. tr.	70.00	....
750	**Hamamelis virginiana,** 5 to 9 ins., S, 1-yr.	8.00	50.00
*250	**Lonicera bella albida,** 18 to 24 ins., br., H.W.C.	15.00	110.00
400	**Lonicera heckrotti,** 8 to 15 ins., 1-yr., T.	12.50	100.00
*400	**Lonicera tatarica alba,** 18 to 24 ins., br., H.W.C.	15.00	110.00
*800	**Lonicera tatarica grandiflora,** 18 to 24 ins., br., H.W.C.	15.00	110.00
1500	**Lycium chinense,** 12 to 18 ins., H.W.C.	6.50	35.00
*1000	**Lycium chinense,** 18 to 24 ins., H.W.C.	9.00	60.00
*2000	**London Plane Tree,** 2 to 3 ft., H.W.C.	20.00	180.00
*1500	**London Plane Tree,** 3 to 4 ft., H.W.C.	29.00	230.00
*200	**Bolleana Poplar,** 2 to 4 ft., H.W.C.	16.00	120.00
*3000	**Lombardy Poplar,** 3 to 4 ft., H.W.C.	11.00	80.00
*300	**Poplar, simoni fastigiata,** 4 to 5 ft., H.W.C.	22.00	....
100,000	**Quercus palustris,** 6 to 10 ins., S, 1-yr.	8.00	45.00
*700	**Salix babylonica,** 3 to 5 ft., H.W.C.	11.00	85.00
*400	**Salix niobe golden,** 3 to 5 ft., H.W.C.	11.00	85.00
*200	**Salix discolor,** 2 to 4 ft., H.W.C., br.	8.00	....
500	**Tamarix africana,** No. 1, H.W.C.	9.00	60.00

*Starred items are perfect grades for mail-order and department store sales.

SHADE TREES—THE COLE SPECIALTY

Thornless Honey Locust, 8 to 10 ft., 1¼-in.
Silver Maple, 1¼ to 2¾-in.
Erect Norway Maple, 2 to 3-in.
Red Maple, 3½ to 5-in.
Sugar Maple, 8 to 10 ft., 1¼ to 2½-in.
Aralia spinosa, 4 to 5 ft.; 5 to 6 ft.
Ailanthus, 8 to 10 ft., 2 to 2½-in.
Fastigiate Birch, 2 to 3-in.
White Dogwood, 4 to 12 ft.
Washington Thorn, 3 to 12 ft.
Green Ash, 6 to 8 ft., 8 to 10 ft.; 1¼ to 1½-in.
Fastigiate Ginkgo, 6 to 8 ft., 8 to 10 ft.
Common Honey Locust, 6 ft. to 1½-in.
Sweet Gum, 2½ to 3-in.
Lombardy Poplar, tr., 5 ft. to 2½-in.
Bolleana Poplar, tr., 6 to 8 ft., 8 to 10 ft.; 1¼-in.
Fastigiate Simon Poplar, tr., 5 ft. to 2-in.
Red Oak, 2 to 6-in.
Fastigiate English Oak, 1½ to 3½-in.
Babylon Willow, 5 to 6 ft., 6 to 8 ft., 8 to 10 ft.
Golden Niobe Willow, 5 to 6 ft., 6 to 8 ft., 8 to 10 ft.
Mountain Ash, 8 to 10 ft.

Many Others in Smaller Quantities.

SHRUBS — EVERGREENS — ROSES
"Everything That's Good and Hardy"

THE COLE NURSERY CO.
Our 71st Year **PAINESVILLE, OHIO**

WE HAVE IN QUANTITY

Apple, 2 and 3-yr.
Pear, 2 and 3-yr.
Cherry, 1 and 2-yr.
Plum, 1 and 2-yr.
Apricot, 1 and 2-yr.
Peach, 1-yr.

Thurlow Weeping Willow, 5 to 6 ft., up to 2-in.

Lombardy Poplar, 5 to 6 ft., up to 2-in.

Arborvitae, Pyramidal; Juniperus columnaris, glauca, keteleeri, Hill's Dundee, up to 3½ to 4 ft. **Pfitzer Juniper,** 15 to 18 and 18 to 24 ins. **Austrian and Scotch Pine,** heavily sheared, 4 to 5, 5 to 6 and 6 to 7 ft.

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Phone: Indianapolis, Belmont 1812
BRIDGEPORT, IND.

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FLOWERING CRABS
ORNAMENTAL TREES
and SHRUBS
Fruit Trees and Berries
Complete Selection
of Fine Roses
Write for our Free Wholesale Catalog

Andrews
NURSERY COMPANY
SINCE 1872
FARIBAULT, MINN.

GENERAL NURSERY STOCK

Ask for surplus list.

THE HENRY NURSERIES
Ingels Bros.
HENRY, ILL.

LINING-OUT STOCK

Our Fall, 1950, price list is now ready. If you are interested in any special items, send us your list NOW.

THOMAS B. MEEHAN CO., Inc.
DRESHER, PA.

This Business of Ours

Reflections on the Progress and Problems of Nurserymen

By E. Sam Hemming

WHAT MAKES THE COLOR IN FLOWERS?

Having both direct interest in hybridizing and a nurseryman's general interest in the multitude of the shades of colors in flowers, I asked myself the question where does the color in flowers come from and what makes their color? When I started to read up on the subject, I found it a complex one, extending into the study of plant physiology, organic chemistry, physics and genetics.

The organic chemist says the color in flowers is due to the formation of a complex molecule called anthocyanin. Its formation and composition is akin to chlorophyll, the green coloring matter in plants and the product of photosynthesis. The anthocyanins form the red and blue pigments in plants and seem to be either red or blue, depending upon an acid or alkaline factor in the plant. The yellow probably comes from xanthophyll, another plant pigment related to chlorophyll. These three pigments give us the three primary colors from which all other colors and shades come as mixtures and blends.

From the physics of color we learn that red and yellow make orange, blue and yellow make green, etc.; also, that white, gray, brown and black are neutral colors produced by the balanced mixture of the primary colors, in varying proportions. We also learn from physics that color comes from the spectrum of sunlight and that when a red flower looks red it is because all the colors of the spectrum are absorbed but the red, which is the only color reflected from the flower. This is true of all other colors and shades of color from one end of the spectrum to the other, and at the extremes we have white, which reflects all colors (the full spectrum as in sunlight), and black, which absorbs all light and reflects none. Since flowers are alive, this is probably why we cannot have black flowers, as there is at least some reflection of light.

As the color pigments in flowers, when mixed, follow the same rules as ordinary paint pigments, one might draw the conclusion that you would get the whole range of colors in the spectrum in all kinds of flowers. In some cases this is true, and when a white flower and a red are crossed, the resulting seedlings will have flowers of varying shades of pink. But in most cases we get nothing of the sort, and we must fall back on the laws of genetics to explain the results we obtain. Due to dominance, we may get all one color or another. Since most of our plants have a long history of hybridization, we may get all sorts of reversions to colors of the ancestors. We may find certain colors linked to other growth characteristics, some of which we may find undesirable. Add to this the chance of getting sports or mutations.

As you know, it is rare to have the whole color spectrum in one species of flower. The rose and the chrysanthemum have the range of red, yellow and white, with all the shades in between, but there is no blue rose or chrysanthemum. We may seek a blue rose or a yellow lilac, but they may be actually impossible, because the pigments, being living matter and not inert, may be chemically incompatible, making their mixture in a plant produce an entirely new chemical.

Yellow and blue seem to be the colors that do not seem to occur together in many species. Since physically these make green, nature would not be served if this occurred in flowers.

Perhaps it is just as well that the color in flowers is such a complicated quality. It allows us endless possibilities to produce endless varieties, and that can mean many thousands of dollars to the hybridizer. E. S. H.

UNCOMMON BERRIES.

My wife makes a hobby of flower arranging and the other day made

LAKE'S
SHENANDOAH NURSERIES
Shenandoah, Iowa.
Wholesale growers of
a fine assortment of
GENERAL NURSERY STOCK
Your inquiries will be appreciated.

SPECIMEN
LANDSCAPE MATERIALS
Our Specialty
TAXUS
W. A. NATORP CO.
Cincinnati 29, Ohio

JUNIPERUS VIRGINIANA
(Red Cedar)
Platte River Strain, 2-yr. sdlgs.
3 to 6, 6 to 12, 12 to 18, 18 to 24 ins.
State number and grade wanted
for quotation.
MICHIGAN FRUIT GROWERS NURSERIES
1500 U. S. 12 **Benton Harbor, Mich.**

The **CHRYSANTHEMUM**
CATALOG you cannot afford
to be without.
WONDERLAND NURSERIES
Ellerson, Va.

VIBURNUM
BURKWOODI
Reduced Prices to the Trade.
Field-grown Plants

	Per 10	Per 100
18 to 24 ins., BR.	**$10.00**	**$ 85.00**
18 to 24 ins., B&B	**13.50**	**120.00**
2 to 3 ft., B&B.	**20.00**	**175.00**
3 to 4 ft., B&B.	**30.00**	**250.00**

Packing at cost

For Lining Out—Own-root Plants

6 to 9 ins. in plant bands	Per 10	Per 100	Per 1000
	$3.00	**$25.00**	**$225.00**

ORDER NOW
F.O.B. Dayton, Ohio. Packing extra at cost. Cash with order earns free packing on liners.
THE SIEBENTHALER COMPANY
CATALPA DRIVE
DAYTON 5, OHIO

LINING-OUT TAXUS
MANY VARIETIES
Write for List.
ECN
EAGLE CREEK
NURSERY CO.
NEW AUGUSTA, INDIANA

50,000 DAHLIA ROOTS
We grow many acres of standard cut flower varieties for the trade.
Write today for wholesale price list.
PAYNE DAHLIA FARMS
ROUTE 5 **KANSAS CITY 3, KAN.**

F.O.B. **BOYD NURSERY CO., McMinnville, Tenn.**

SPECIALS FROM BOYD'S

Chinese Elm

This item is becoming quite scarce, too. Our inventory still shows a surplus, and orders will be booked at the following prices until supply is exhausted. First Come—First Served.

Ulmus Pumila, Chinese Elm

	Per 100	Per 1000
6 to 12 ins., sdlgs.	**$ 1.50**	**$10.00**
12 to 18 ins., sdlgs.	**2.00**	**15.00**
18 to 24 ins., sdlgs.	**2.50**	**20.00**
4 to 5 ft., br.	**35.00**	....
5 to 6 ft., br.	**45.00**	....
6 to 8 ft., br.	**70.00**	....

an attractive bouquet of some honeysuckle twigs and their black berries, some pokeweed berries and some foliage background. Of course, pokeweed is an annual, but a great many shrubs and trees that we grow have berries and fruit that are not their principal feature, yet are attractive. When we think of berried plants we are likely to think of the showy ones like nandina, holly, the viburnums, the pyracanthas and the crabs.

If you have been to many garden club shows lately, you will have noticed how much emphasis is paid to the use of this sort of material in arrangements. Some of them show affectation, but many are good. Perhaps we, as nurserymen, do not consider these possibilities enough or advertise those features as we should.

The two little evergreen bush honeysuckles, Lonicera nitida and pileata, when mature plants, bear the richest dark purple translucent berries you've ever seen.

The magnolias bear large conelike pods, from which red seeds pop and then hang on by a thread. The southern magnolia is particularly showy in the fall and, with its evergreen leaves, is most attractive.

Most of the privets are used as hedges and as such do not often flower or fruit, but when they are let grow, they flower heavily with rather too sweet-scented white flowers and bear great quantities of clusters of blue fruit. The evergreen wax privet and the big Japanese variety are quite conspicuous, and the pendulous Regel and Chinese forms are graceful.

The English ivy, when it gets quite old and sends out its flowering spurs, also bears large clusters of blue berries.

As a rule, we do not advertise and sell our coniferous evergreens for their conspicuous berries, but a number do bear them. Many of you know that the commercial florists sell considerable quantities of cut native red cedar sprays laden with their gray-blue fruit for Christmas

NORTHERN-GROWN STOCK
Evergreen Liners
Specimen Evergreens
Ornamental Shrubs
Fruit Trees
Plum Seedlings
(Prunus Americana)
Philadelphus Minnesota Snowflake
(Plant Patent No. 538).
Send for list.
J. V. BAILEY NURSERIES
ST. PAUL 6, MINNESOTA

ORNAMENTALS
TREES SHRUBS
EVERGREENS
Wholesale growers of a general assortment for the best landscape plantings.
BRYANT'S NURSERIES
Princeton, Illinois

Over 100 Years' Nursery Experience
ILGENFRITZ
NURSERIES, Inc.
The Monroe Nurseries
MONROE, MICHIGAN
GET THE BEST BUY ILGENFRITZ

Wholesale growers of the best
Ornamental Evergreens,
Deciduous Trees
Shrubs and Roses
Write for our current trade list.
THE KALLAY BROTHERS CO.
Painesville, Ohio

PHOTINIA VILLOSA
12 to 18 ins. trans. **$12.50** per 100.
NEWPORT NURSERY CO.
NEWPORT, MICHIGAN

GLADIOLUS BULBS
We specialize in tested and proven best commercial cut flower varieties. True, clean, healthy stock our principal aim.
BENNINGTON'S NURSERY
Lake City, Iowa

NEW!
VIBURNUM CHENAULTI
Another evergreen hybrid of Viburnum carlesi.
More compact in growth than Viburnum burkwoodi
Flowers identical to Viburnum carlesi.
Liners 6 to 9 inches in plant bands.

Per 10	Per 100	Per 1000
$5.00	**$35.00**	**$325.00**

FIELD-GROWN PLANTS
18 to 24 ins., B.B., **$17.50** for 10; **$150.00** for 100.
2 to 3 ft., B.B., **$25.00** for 10; **$225.00** for 100.
Packing at cost
THE SIEBENTHALER COMPANY
CATALPA DRIVE DAYTON 5, OHIO

DO YOU NEED . . .
Flowering Shrubs
Shade Trees
Evergreens
Lining-out stock
Phlox or Peonies
Apples or Plums
Perennials
Plum Seedlings
If so, please write for copy of our new wholesale price list.
SHERMAN NURSERY CO.
CHARLES CITY, IOWA

EVERGREENS
Seedlings - Transplants
Write for illustrated list.
MATTHEWS NURSERY
HARBOR SPRINGS, MICH.

EVERGREENS
Growers of Quality Evergreens
Lining-out Stock a Specialty
Write for Trade List
EVERGREEN NURSERY CO.
Established 1864 : STURGEON BAY, WIS.

BURTON'S
HEADQUARTERS FOR
EVERGREEN GRAFTS, TRANSPLANTED EVERGREENS, SHRUB LINERS.
RARE ITEMS YOU DO NOT FIND IN MOST LISTS!
Write!
HILLTOP NURSERIES
CASSTOWN, OHIO

WE OFFER
FOR SPRING SHIPMENT
NURSERY-GROWN STOCK

Tsuga Canadensis.

	Per 100	Per 1000
6 to 9 ins., tr. xx	$ 9.00	$ 80.00
9 to 12 ins., tr. xx	13.00	120.00
12 to 15 ins., tr. xx	16.00	150.00
Abelia Grandiflora.		
Hydrangea Paniculata Grandiflora.		
6 to 12 ins., 1-yr., C.	7.00	65.00
12 to 18 ins., 1-yr., C.	11.00	100.00
18 to 24 ins., 2-yr., br.	15.00	....

Cornus Florida.	Each
2 to 3 feet, well br.	$0.20
3 to 4 feet, well br.	.30
4 to 5 feet, well br.	.45

Native Shrubs and Evergreens

Tsuga Canadensis.	Per 100	Per 1000
3 to 6 ins., s.	$1.25	$10.00
6 to 9 ins., s.	1.60	15.00
9 to 12 ins., s.	2.50	20.00
12 to 18 ins., s.	4.00	35.00
18 to 24 ins., s.	6.00	55.00
Ilex Opaca.		
Rhododendron Maximum.		
Kalmia Latifolia.		
3 to 6 ins., s.	2.00	15.00
6 to 9 ins., s.	3.00	25.00
9 to 12 ins., s.	4.00	35.00
12 to 18 ins., s.	5.00	45.00
18 to 24 ins., s.	6.50	60.00

Kalmia Latifolia. **Rhododendron Maximum.**	Each per 10	Each per 100
12 to 18 ins., heavy br.	$0.20	$0.15
18 to 24 ins., heavy br.	.25	.20
Azalea Calendulacea.		
Azalea Nudiflora.		
12 to 18 ins., liners	...	.07
12 to 18 ins., heavy br.	.12	.10
18 to 24 ins., heavy br.	.17	.15

CUMBERLAND PLATEAU NURSERY
YORK ROUTE CROSSVILLE, TENN.

We Offer
OUR USUAL SUPPLY OF NURSERY STOCK

Apple Peach Pear
Plum Cherry Apricot
Figs Grapes Pecans
June Bud Peach
Japanese Persimmon
Ornamental and Shade Trees

Send us your want list;
write for prices.

COMMERCIAL NURSERY CO.
Nicholson Bros. DECHERD, TENN.

QUALITY JUNIPER GRAFTS

For spring, 1951, delivery, from 2½-in. pots on Virginiana understock. We are grafting **Juniperus Virginiana Canaerti, Glauca, Pyramidiformis** (Dundee), **Burki** and **Keteleeri.**

2 and 3-yr. field-grown Grafted Junipers in the above varieties.

PAUL ARTERBURN NURSERY
P. O. Box 72 St. Matthews, Ky.

decorations. Others are also interesting for their berries, including the Keteleer and Canaert cedars, several of the chamaecyparis, particularly the Lawson cypress, and the American and Oriental arborvitaes, although what the last-named bear is not exactly berries. The yews, of course, have showy red berries, and there are varieties sold that have that as their main feature.

We sell the white dogwood for its showy white flowers and beautiful fall foliage coloration, but often we see a tree bearing its red berries in such profusion that it approaches, even though it does not match, the English hawthorn.

Among the flowering shrubs, unnoticed berries are not so frequent. The plants are either conspicuous berry bearers, like the barberries and the viburnums, and are sold with that as their main feature, or they have showy but sterile flowers. Some have just small dry seed pods, and many of these are quite interesting, such as spicebush, pearlbush, lilac and sumac. Others, like the smoke bush, have a plumy, filmy "smoke" in which the seeds are borne.

Among the flowering shrubs sold chiefly for their flowers which have showy berries are the shrub roses. The rugosa rose has large, almost apple-like, bright red fruit, and some other forms, like Rosa carolina, have quantities of smaller berries.

We can find beauty in many less conspicuous forms, and among the plants we grow and sell are many interesting fruiting forms to which we can pay attention. E. S. H.

PLANT PATENTS.

The following plant patents were issued recently, according to Rummler, Rummler & Snow, Chicago patent lawyers:

No. 992. Rose plant. Eugene S. Boerner, Newark, N. Y., assignor to Jackson & Perkins Co., Newark, N. Y. A new and distinct variety of rose plant characterized as to novelty by the true yellow color and perfect form of the individual large-flowered polyantha-type blooms combined with the general plant and foliage characteristics of the floribunda variety Pinocchio (plant patent No. 484), and the steady floriferousness of the variety.

No. 993. Strawberry plant. Marion Hagerstrom, Enfield, Minn., assignor of one-half to Carl R. Hagerstrom, Enfield, Minn. An everbearing strawberry plant, characterized by the large number of hardy fruit-producing runner plants, and by a firm generally conical wedge-shaped berry, dark red in color, with a lustrous irregular surface and a rich, mildly acid, sweet, tangy flavor, and particularly adapted to grow successfully and prolifically in a large number of soil types under a variety of extreme weather conditions.

No. 994. Rose plant. Herbert C. Swim,

We Offer for Spring,
1951

	Per 100	Per 1000
Liriodendron, Tulip Poplar.		
6 to 12 ins.	$1.75	$15.00
12 to 18 ins.	2.00	18.00
2 to 3 ft.	3.00	25.00
3 to 4 ft.	4.00	35.00
Cercis Canadensis, Redbud.		
6 to 12 ins.	2.50	20.00
12 to 18 ins.	3.00	25.00
2 to 3 ft.	4.00	35.00
3 to 4 ft.	5.00	45.00
Cornus Florida, White Dogwood.		
6 to 12 ins.	2.50	20.00
12 to 18 ins.	3.50	30.00
2 to 3 ft.	4.50	40.00
3 to 4 ft.	6.00	50.00
Azalea, Flame or Red to Crimson.		
6 to 12 ins.	4.50	40.00
12 to 18 ins.	5.50	45.00
18 to 24 ins.	6.50	55.00

H. G. HALLUM NURSERY CO.
McMINNVILLE, TENN.

NURSERY-GROWN

	Each
Cornus Florida, 2 to 3 ft., sdlgs., light br.	$0.15
3 to 4 ft., light br.	.25
4 to 5 ft., sdlgs., well br. tr.	.50
Calycanthus, 2 to 3 ft., sdlgs.	.07½
Abelia Grandiflora, 12 to 18 ins., light br.	.15

Amur River South Privet, sdlgs., 1-yr., field-run, $7.50 per 1000.

Your want list for other stock appreciated.

The ARNOLD C. CLARK NURSERY
Route 2 McMinnville, Tenn.
Phone: 0722

SPECIALTY ITEMS
From the Center of the South.

Red-leaved Barberry, bushy transplants	Each
15 to 18 ins.	$0.20
18 to 24 ins.	.30
Tree Wistaria	
3 to 4 ft.	3.00
2 to 3 ft.	2.25

THE Southern Est. 1872
Nursery & Landscape Co., Inc.
Write for our complete new wholesale list.
WINCHESTER, TENN.

30,000 Potted Taxus Liners
1, 2 and 3-year.
Weigela Eva Rathke, transplants.
Viburnum Rhytidophyllum.

HUMPHREYS LANDSCAPE SERVICE
MT. STERLING, KY.

WE OFFER FOR IMMEDIATE SHIPMENT

Cornus Florida.

White-flowering Dogwood.	Per 100
18 to 24 ins., 2-yr., br.	**$10.00**
2 to 3 ft., 2-yr., br.	**15.00**
3 to 4 ft., 2-yr., well br.	**20.00**

The above are well cultivated plants and have good root systems.

Amur River South Privet.	Per 1000
12 to 18 ins., 2-yr., br.	**$10.00**
18 to 24 ins., 2-yr., br.	**15.00**
2 to 3 ft., 2-yr., well br.	**20.00**

The above privet was in storage and was not damaged by the cold weather.

Write for prices on **Amur River North Privet; Ibolium Privet; Hall's Honeysuckle,** 1 and 2-yr. tr.; **Philadelphus, Deutzia** and **Abelia Grandiflora,** etc.

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WRITE FOR TRADE LIST
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Ontario, Calif., assignor by mesne assignments to Eldon Pinkney Dering, doing business under the name and style of Peterson & Dering, Scappoose, Ore. A new and distinct variety of rose plant characterized as to novelty by the strong fragrance of its flowers; the very long, strong stems bearing individual flowers of exhibition size on each stem; a combination of form, size and color in the flower unique in hybrid tea roses; the heavy, leathery, highly mildew-resistant foliage of moderately large size, and by its habit of vigorous growth to a tall plant with very little branching at the base, but with stems and flowers borne more or less continuously at a progressively greater height during each growing season.

No. 995. Plum tree. Elmer Stark, Di Giorgio, Calif., assignor to Di Giorgio Fruit Corp., San Francisco, Calif. A plum tree characterized particularly by the larger size and round shape of its fruit.

No. 996. Rose plant, Fred H. Howard, deceased, late of Montebello, Calif., by Minnie J. Howard, executrix, Montebello, Calif., assignor to Howard & Smith, Montebello, Calif. A new and improved variety of hybrid tea rose plant, characterized particularly by its strong and vigorous growth; its exceedingly prolific production of good flowers; its large, dark green, substantial, disease-resistant foliage, with unusual rounded leaflets; its long, sturdy flower stems; its long, pointed bud, and the substantial petals of its flowers.

No. 997. Rose plant. Esther G. Fisher, Woburn, Mass., assignor to Arnold-Fisher Co., Woburn, Mass. A new and improved variety of hybrid tea rose plant, characterized particularly by its especial adaptability to garden culture; its strong, tall growth producing heavy canes and shoots; its prolific and constant production of blooms throughout the summer, and the intense fragrance, globular form, excellent keeping quality and deep rose-red color of its flowers.

No. 998. Rose plant. Esther G. Fisher, Woburn, Mass., assignor to Arnold-Fisher Co., Woburn, Mass. A new and distinct variety of hybrid tea rose plant, characterized particularly by its adaptability to garden culture, its exceedingly great strength and vigor of growth; its relative hardiness and disease resistance; its long, sturdy canes and flower stems; the strong, wiry neck or peduncle of the flower, and the high-centered form and rose-pink color of its flower, which lasts unusually well.

No. 999. Rose plant. Esther G. Fisher, Woburn, Mass., assignor to Arnold-Fisher Co., Woburn, Mass. A new and distinct variety of hybrid tea rose, characterized particularly by the delicate though strong structure of the stems; its continuous production of flowers throughout the year; the prominent veining of its foliage; the high-centered form of the flower which, in the cool season, usually opens to cup shape with fluted petals, and the essentially lavender color of its bud and flower.

No. 1000. Rose plant. Henry M. Eddie, Vancouver, B. C., assignor to H. M. Eddie & Sons, Ltd., Vancouver, B. C. A new and distinct variety of hybrid tea rose plant, characterized as to novelty by its vigorous growth; its extraordinary resistance to disease; its abundant, large dark green glossy foliage; its strong peduncle; its large, high-centered, long-lasting, well formed flowers, which are basically capucine buff in color and composed of heavy-textured, satiny petals, and the great abundance of flowers produced throughout the blooming season.

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"HOW TO MAKE YOUR OWN NURSERY ADS THAT SELL"

By J. H. Slingerland

Make your New Year's resolution pay off in bigger business with this telegraphically simple 4-step Fundamentals of Nursery Stock Advertising that teaches YOU how to MAKE ADS THAT SELL. Accepted enthusiastically and applauded by hundreds of Nurserymen at their annual meetings over the past 2 years.

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Written by an Advertising Man turned Nurseryman—this identical 4-step Method built a Million-dollar Nursery business in 3 years. "Worth $100"—"One hour with this and I can do it"—"Waiting years for this"—"Most understandable thing I've ever seen"—"Told us everything we needed to know"—say nursery owners. A university professor said—"Marvelous teaching technique."

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Here's what this brass-tack, pin-point Brochure tells you, teaches you, does for you . . .

- Gives you complete understanding of the 2 Principles that Make Ads Sell and tells YOU how to apply them yourself.
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- Gives the KEY to writing Headlines That Sell, so YOU can write them.
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TEACHES WITH CONVICTION, PROOF

Dramatic, pointed humor "sugar coats" the calm, logical, telegraphically brief teaching technique, makes the lessons "sink in." No ifs, ands, buts or qualifications—no extra words. One hour with "How to Make Your Own Nursery Ads That Sell" and YOU CAN START building your own ads.

Includes complete artist's drawing of fully executed ad, embodying ALL FOUR STEPS taught you in the Brochure—proving you can do it, because you'll recognize that headlines and copy fit the "lessons" perfectly.

FILLED WITH "PROFIT-PLUS" IDEAS

In addition to advertising, this Brochure gives you "no-cost" sales-getting ideas . . .

- How to DOUBLE and TRIPLE the customer flow into your nursery.
- How to get repeated free publicity news items and photographs of your nursery in your local newspaper.
- How to get the whole town talking about your nursery, recommending you.
- How to advertise any item in your nursery so the customer can't buy it anywhere else; he must come to you.
- How to get higher prices for all advertised nursery items.
- How to beat the chains without cutting prices; take their business away.
- Reveals 12 specific huge sales opportunities this year—when people in your town must spend money—and tells you how to have it spent for Nursery Stock.
- Why the Nurseryman is his own best ad man.

COMPLETE YEAR-'ROUND AD PROGRAM

Provides you with a complete year-around advertising program for YOUR nursery—YOUR Own Town—YOUR Local Paper. Twenty years' advertising and selling experience backs up every recommendation. You'll agree with everyone—NOW KNOW how to do them yourself—quickly, confidently, successfully.

Price only $5.00 per copy

Available direct from author only. He was formerly Advertising Manager of Montgomery Ward's Nursery Stock Department; Director of Dale Carnegie Institute, Chicago; Guest Lecturer, Northwestern University.

Order today—send check or money order. This Brochure tells How, What and Why to start advertising in March, 1951. Price, $5, complete. Order today to be ready for a fast, profitable start.

J. H. SLINGERLAND
Box 528 Wheaton, Illinois

Propagation of Dwarf Fruit Trees

Increased interest in gardening shown by homeowners has led to a demand for dwarf trees and shrubs, fruit and ornamental, more than the trade could supply. Much work has been done in regard to dwarfing rootstocks, as reported in these pages from time to time, but their slow multiplication has been a barrier to much progress. Given most notice have been the Malling rootstocks, from England, which have been propagated but slowly in this country.

Recognizing the problem, the Arnold Arboretum, at Jamaica Plain, Mass., has given attention to this problem, and in its bulletin Arnoldia for November 10, 1950, the director, Dr. Karl Sax, describes some of the work done. The following excerpts discuss some procedures and possibilities which will be of interest to nurserymen concerned with dwarf trees:

"The Malling rootstocks are propagated by layering—an expensive process—because most apple varieties do not come true from seeds. We have found, however, that many of the Asiatic species of apple do breed true from seeds, and we are testing these as rootstocks for both ornamental crabs and commercial varieties. Malus sikkimensis seems to be a good semidwarfing rootstock. McIntosh budded on M. sikkimensis seedlings has produced semidwarf spreading trees. A 10-year McIntosh of this type bore more than 250 apples last summer. The rootstock causes the low spreading growth habit. The graft union is excellent, with some overgrowth of the rootstock characteristic of dwarfing rootstocks. Malus florentina, a species from north Italy, is too dwarfing, and a 3-year-old McIntosh budded on this rootstock is only about two feet tall. The Sargent crab seems to be a good dwarfing stock, but different varieties vary greatly in growth when budded on Malus sargenti.

"Another method of modifying the growth of apple trees is by upside-down budding or grafting. More than twenty-five years ago I budded 7-year apple whips, placing the buds where the permanent branches were wanted, but the buds were inserted upside down. The buds start growing toward the ground, and the branches gradually grow upward to form a spreading tree with unbreakable crotches. In pears, such flattened trees bear earlier. In parts of Europe and California the branches of young pear trees are often tied down in a nearly horizontal position in order to flatten the tree and make it bear earlier. A Clapp's Favorite pear on the Bussey grounds has been treated in this manner with very satisfactory results.

"Another process is based upon the transfer of plant hormones. The plant hormones produced by the leaves and growing points pass down the phloem of the bark and stimulate root growth. If a complete ring of bark is removed from the trunk of the young tree and turned upside down, the plant hormone is checked and a swelling occurs at the point of bark reversal. As a result the hormone does not get to the roots in normal amounts and growth of the tree is retarded.

"Bradley, in 1726, described a method of grafting which we have repeated with some modification. The tops of two seedling pears growing about eighteen inches apart in the nursery row were brought together. A graft was made so that the stems formed an arch. According to Bradley, if the roots of one of the two seedlings are dug up and the seedling staked upright so that it stands inverted on the stem of the other seedling, the roots in the air

BLACKWELL NURSERIES
SEMMES, ALABAMA
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WHOLESALE ONLY
AMERICAN ASSOCIATION OF NURSERYMEN
Azaleas, Camellias, Magnolias and a General Line of Ornamental Nursery Stock
Lining-Out Stock Our Specialty

DUG BEFORE THE FREEZE!
CRAPE MYRTLE WILLIAM TOOVEY
The most magnificent of them all. Produces great masses of beautiful deep watermelon-red flowers.
Just one grade left unsold:

	Per 10	Per 100
3 to 4 ft.	$7.00	$60.00

5 plants at the 10 rate.
25 plants at the 100 rate.
CHASE NURSERY CO.
CHASE, ALABAMA

SEMMES NURSERIES
AZALEAS - CAMELLIAS
and other choice evergreens
Wholesale Catalog SEMMES, ALA.

Old English BOXWOOD
(Wholesale Only)
SELLING OUT. Specimens 20 x 16 ins. and up; also very large specimens. No smaller stock left. Special discounts on carload or truckload orders. Prices on request. Inspection invited.
BOXWOOD GARDENS
Mrs. R. P. Royer High Point, N. C.

FIELD-GROWN EVERGREEN LINERS
1 and 2-yr. plants, well rooted and well furnished with plenty of tops.

	Each per 100	Each per 1000
Savin Juniper, 1-yr., 6 to 12 ins.	$0.12½	$0.10
Greek Juniper, 1-yr., 6 to 12 ins.	.12½	.10
Irish Juniper, 1-yr., 8 to 15 ins.	.12½	.10
Irish Juniper, 2-yr., 8 to 18 ins.	.17½	.15

300 or more plants at 1000 rate.
Stock will be well packed and is guaranteed to reach you in good condition. No packing charge. Cash with order, please.
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CHASE, ALA.

Supreme Selling...
ROSES
- Nationally Advertised
- Cold Storage
- Now Booking
- Highest Quality
- Standard and Patented

CO-OPERATIVE ROSE GROWERS
TYLER, TEXAS

LINING-OUT AND FINISHED STOCK
Azaleas, Camellias, Magnolias and other Ornamentals.
Catalog on request.
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MOBILE, Crichton Sta., ALABAMA

CAMELLIAS
New low wholesale prices on field-grown, irrigated camellias. Also azaleas, fruit and pecan trees.
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SPECIAL OFFER
LESS THAN 3,000 TO SELL
IRISH JUNIPER
18 to 24 ins.
Container-grown plants.
45c each
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Scottsville, Texas
VERHALEN NURSERY CO.
SCOTTSVILLE, TEXAS
Your Profits Grow in
Verhalen Plants

ROOTED
ROSA MULTIFLORA
SEEDLINGS
In lots of 1000 to 5000,
only $50.00 per 1000.
In lots of 5000 and up,
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Wholesale Exclusively
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FRUIT TREES
SPECIMEN EVERGREENS
LINING-OUT STOCK
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SNEED NURSERY COMPANY
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Oklahoma City 1, Okla.

Wholesale nursery
in business for 30 years.
Beautiful
NATIVE RED CEDARS
Immediate and Spring. While they last. Never able to supply all our orders in the spring. Book orders now.

	Per 1000
5 to 10 ins.	$20.00
10 to 15 ins.	35.00
	Per 100
15 to 24 ins.	$ 7.50
24 to 36 ins.	12.50

Write for good prices on Hard Maples, Dogwood, Redbud, Black Walnuts, etc.
ROLLERS NURSERY
Phone 661 ROGERS, ARK.

GRAPE CUTTINGS
New low prices per 1000.
Concord, $5.00; Niagara, $5.50;
Delaware, $5.50; White Elvira, $5.50.
Wire-bound, 100 per bunch, expertly cut. Packing free.
Place orders at once, large or small.
PAW PAW PLANT CO.
PAW PAW, MICH.

will form leaves and flowers. We do not expect such results, but we have inserted a Clapp's Favorite bud upside down a few inches beyond the graft. Next spring the seedlings will be cut off just below the inserted bud. As a result, we shall have a normal pear seedling with an upside-down section of the second seedling, and on top of this the bud which is to form the new tree. The inverted stem section should exert a dwarfing effect. In the upside-down bark and stem grafts it is possible that the new cells may eventually become oriented to provide normal polarity. In such case the dwarfing effect would be temporary.

"Many species of apples, pears, hawthorns and other pomoideae have been intergrafted to find dwarfing stocks. A promising dwarfing stock for pears is Cotoneaster multiflora, although not all cultivated pears grow well on cotoneaster.

"Quince rootstocks of specific clonal lines are commonly used for dwarfing pears, but since all pear varieties will not grow on quince, double working is often necessary, as in the case with cotoneaster. The cotoneaster root system makes it difficult to transplant the grafted pear; so we now bud cotoneaster on either wild pear or on hawthorn and double work with cultivated pear. Thus we have a seedling pear or hawthorn root, an intermediate stem of cotoneaster and a pear top. The intermediate stem piece acts as a dwarfing stock.

"One of the most interesting combinations is Aronia arbutifolia budded on hawthorn rootstock. There is considerable overgrowth of the Crataegus pedicellata rootstock, but the aronia top is healthy and fruited abundantly in its third year. The tree form is much more attractive than the usual bush type.

"Graft combinations of various prunus species have shown some interesting results. Peaches and plums budded on Prunus tomentosa seedling rootstocks produce dwarfed trees which bear early. All varieties of peaches and plums do not make compatible unions with the Nanking cherry rootstock. Most peaches budded on P. tomentosa produce trees about two to nearly three feet tall the first year. The second year most of them flower and occasionally fruits are produced. A 2-year-old tree of Jerseyland peach bore eleven full-sized peaches the second year after budding, and the peaches were ripe before August 1 in 1949. This summer a 4-year-old Valencia peach on P. tomentosa stock bore eighty-four

RIDER'S HARDY
STRAWBERRY PLANTS
All stock F.O.B. Farmington, Ia.

	Per 1000
Superfection Everbearing	$20.00
Minnesota 1166 Everbearing	18.00
Gem Everbearing	14.00
Premier, Temple, Bellmar	9.00
Fairland, Sparkle, Minnesota 1118	9.00
Dunlap, Giant New Robinson	7.50
Blakemore, Beaver	7.50

OTHER ITEMS

	Per 100
Linnaeus Rhubarb, 1 to 2-in. cal.	$ 5.00
Linnaeus Rhubarb, ½ to 1-in. cal.	3.00
Horse-radish Crowns	5.00
Horse-radish Roots	3.00
Sage Plants	12.00
Mixed Dahlia Tubers	12.00
Mme. Crozy or Y. K. Humbert Cannas	5.00

GRAPEVINES

	Per 100
Concord, Fredonia, Niagara, 1-yr., No. 1	$ 6.00
Beta, Bluejay, 2-yr., No. 1	12.00

GLADIOLI

	Per 1000
Spotlight, No. 1	$25.00
King Lear, Gardenia, No. 1	16.00
Token, Lulu Hunt, No. 1	16.00
M. Fulton, Florists' Mix, No. 1	14.00

Other grades, varieties, available. Hybrid White Hulless Iopop Popcorn, shelled, cleaned, very good, $10.00 per 100 lbs.

Write for our Wholesale List and information on a general line of nursery stock. We have a direct shipment service for handling orders shipped direct to your customers. We also have available a good selection of standard northern varieties of Apples and Plums.

Growing contracts on above type of stock.
RIDER NURSERIES
Farmington, Iowa

FRUIT TREES
Apple, 1 and 2-yr., Dwarf and Standard.
Pear, 1 and 2-yr., Dwarf and Standard.
Plum, 1 and 2-yr.
Sweet and Sour Cherry, 1 and 2-yr.
Quince, 2-yr.
Apricot, 2-yr.
Peach, 1-yr.
Write for our wholesale list.
KELLY BROS. NURSERIES, Inc.
DANSVILLE, N. Y.

PEAR TREES
10 trees or 50,000 trees.
Le Conte, Garber, Kieffer, Douglas, Baldwin, Orient, Pineapple, Bartlett, Biscamp, Lincoln and others.

	Each
2 to 3 ft.	25c
3 to 4 ft.	35c
4 to 5 ft.	40c
5 to 6 ft.	45c
6 to 7 ft.	50c
7 to 8 ft.	55c

Write us about any big order for orchard planting.
We have a few thousand P. calleryana seedlings to offer the trade this season in sizes from 16 to 24 ins., well calipered. Apparently the best understock for long-life pear trees. Ask for our list. Satisfied customers throughout the southwest are our best references.
WHITEROCK NURSERIES
Geo. M. Jeffus, Mgr.
Box A CROCKETT, TEXAS

GROWING SATISFACTION

CHERRY — The finest block of cherry we have ever grown.

PEACH — Complete assortment of standard varieties.

APPLE — PEAR — PLUM — GRAPES
RHUBARB — ASPARAGUS

EVERGREENS — Extra-select specimens. Grafted Junipers - Arborvitae - Euonymus.

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We can furnish you with beautiful, full-color 64-page PLATE BOOK for YOUR SALESMAN.
A Post Card will bring complete wholesale price list.

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WE OFFER . . .
Our General Line of
SMALL FRUIT PLANTS
Let us quote on your requirements.
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Bridgman, Michigan

SMALL FRUIT PLANTS
Thirty varieties of Grapes, including the
Siebel No. 1000
also
Currants and Berry plants
Write for price list.
FOSTER NURSERY CO., Inc.
FREDONIA, N. Y.

HEADQUARTERS FOR
East Malling IX
Dwarf Rootstock
$18.00 per 100
$150.00 per 1000
VAN HOF NURSERIES
Bristol Ferry Rd. PORTSMOUTH, R. I.

Chipman's
RED RHUBARB
Large, No. 1 divisions.
The kind you like to get.
$20.00 per 100
Cash with order, packing free.
Write for prices on larger quantities.
KEELER'S GARDENS
SIOUX FALLS, SOUTH DAKOTA

We specialize in
these outstanding products
Chipman's Canada Red, MacDonald and Valentine Rhubarb.
Minnesota Fruit Breeding Farm creations.
Hardy Apple and Plum Seedlings.
SUMMIT NURSERIES
STILLWATER, MINN.

STRAWBERRY AND BLUEBERRY PLANTS
also
Raspberry, Grapevines, Boysenberry, Dewberry, Blackberry and Horse-radish.
Shipped direct to you or your customers.
H. D. RICHARDSON & CO.
BOX 22 WILLARDS, MD.

SMALL FRUIT PLANTS
Evergreens—Shrubs
Asparagus—Rhubarb
Send for Complete Trade List.
W. N. SCARFF'S SONS
NEW CARLISLE, O.

peaches on a tree about six feet tall.

"Prunus tomentosa is also a good rootstock for plums, and a 3-year-old Stanley plum tree flowered heavily and bore a few fruits the past summer, although the tree was little more than three feet tall. Prunus triloba multiplex budded on P. tomentosa produced a tree growth habit, although both stock and scion species commonly grow as a spreading bush. The tree form is most attractive, and the plant bloomed profusely the second year.

"Beach plums have also been grown on P. tomentosa. Seedlings or cuttings of beach plums are often difficult to transplant, and it is hoped that by budding on the Nanking cherry, with its more fibrous root system, the beach plum can be transplanted more readily. There is some dwarfing effect of the P. tomentosa rootstock, but the beach plums are still too young to be sure of ultimate success.

"Peaches and plums are dwarfed even more when budded on Prunus glandulosa, but this rootstock suckers badly from the root, and the suckers have to be pruned back for several years. In spite of this difficulty, P glandulosa may prove to be a better rootstock than P. tomentosa because of better compatibility with more varieties of peach and plum, and a somewhat greater dwarfing effect.

"It is hoped that eventually we shall be able to produce dwarf apples, pears, peaches and plums, as well as dwarf ornamental trees and shrubs, on seedling rootstocks which will induce the desired degree of dwarfing. Most people prefer trees which are small and can be cared for by the home gardener. Although our work with seedling dwarfing stocks is still in the early stages of development, many horticulturists may be interested in the project, and all are invited to visit our test plots at the Bussey Institution, adjacent to the Arnold Arboretum."

HOW TO INCREASE PLANTS
by Alfred C. Hottes
Discusses method of propagation for seeds, cuttings, bulbs, grafting, fruit stocks, annuals, perennials, conifers, ferns, roses, trees and shrubs, (1949).
Price, $3.00 postpaid.
AMERICAN NURSERYMAN
343 S. Dearborn St. Chicago 4, Ill.

WE OFFER TO THE NURSERY TRADE
surplus
PEACH, SOUR CHERRIES, ORNAMENTAL SHRUBS and LINING-OUT STOCK.
Send us your list for quotations for Spring, 1951, delivery.
THE PONTIAC NURSERY CO.
ROMEO, MICH.

ALBUQUERQUE ACTIVITIES.

When members of the Albuquerque Nurserymen's Association met at Albuquerque, N. M., November 16 they elected Mrs. Frances Hassinger, Professional Landscaping Service, president; Walter B. Suhr, tree surgeon, vice-president; Mrs. Harold Davidson, Dwarf Fruit Nurseries, secretary-treasurer, and H. L. Davidson, of the same firm, membership chairman.

At another meeting December 21, Cecil Pregnall, county agent, spoke on "Things Wrong with Local Nurseries."

The association purchased advertising space in a local newspaper to publish its code of ethics which lists six objectives: To render only expert service, to furnish written estimates, to assure honest values, to represent all merchandise according to nursery standard, to assist customers to attain maximum results and to inspire confidence to the public. Five firms signed the advertisement as having voluntarily subscribed to the code which has met the standards of the better business bureau. They are Dwarf Fruit Nurseries, Heights Nurseries, Premier Nursery, Professional Landscaping Service and Walter B. Suhr, tree surgeon.

Since the invitation of membership for New Mexico nurserymen in Albuquerque Nurserymen's Association was published in November, many applications have been received, and this response has given the incentive to form a state nurserymen's association. All licensed nurserymen in the state will soon receive an invitation to meet with Albuquerque nurserymen in a 2-day meeting to set up such an organization. Those wishing to make reservations for the meeting should write to Mrs. H. L. Davidson, Dwarf Fruit Nurseries, 1740 Bonaguidi road, Albuquerque.

Last spring a sick mother and her 7-year-old daughter, Rita, were found living in a hovel on the east mesa at Albuquerque, and, when the facts about their poverty were published, citizens opened their hearts and pocketbooks to the pair. Contractors, real-estate operators, bankers and lawyers and all trade unions cooperated to build Rita the home of her dreams, a pink house with a white fence, and now local nurserymen will see that it receives a complete landscape job. The plan is to be designed by the Dwarf Fruit Nurseries, and other members of the Albuquerque Nurserymen's Association will select the part of the plan they can best handle. This gives the nurs-

MALONEY BROS. NURSERY CO., Inc.
DANSVILLE, NEW YORK
Our 67th Year

One of the largest producers in New York State of Hardy Upland-grown, Inspected for Trueness-to-name Fruit Trees offers a complete assortment of

Standard and Dwarf Apple, 1 and 2-yr.
Plum, 1 and 2-yr.
Standard and Dwarf Pear, 1 and 2-yr.
Sweet and Sour Cherry-Quince, 1 and 2-yr.
Also **Peach,** 1-yr.
Also a good assortment of
Shrubs, Shade Trees, Evergreens.

Write for List of Varieties.

See Howard Maloney at the Illinois State Nurserymen's Meeting.

Save Money — Let Us Quote on Your Wholesale Requirements

BUNTINGS' NURSERIES, Inc.
Growers of Quality Trees and Plants

	Per 25	Per 100	Per 250	Per 1000
STRAWBERRY PLANTS				
Blakemore, Klondike	$0.40	$ 1.25	$ 2.25	$ 7.50
Ambrosia Late, Aroma, Big Joe, Dorsett, Dunlap, Fairfax, Fairland, Gandy, Lupton Late, Massey, Midland, Missionary, Premier, Robinson, Southland, Sparkle, Temple	.40	1.25	2.25	8.00
Catskill, Fairpeake	.45	1.35	2.50	8.50
EVERBEARING:				
Gem, Gemzata, Mastodon, Streamliner, Superfection	.70	2.25	4.50	16.00
MARY WASHINGTON ASPARAGUS ROOTS				
3-year, No. 1	1.00	3.50	7.50	25.00
2-year, No. 1	.80	2.75	5.25	18.00
1-year, No. 1	.65	2.25	4.00	12.00
VICTORIA and MYATT'S LINNAEUS RHUBARB				
2-in. up, forcing grade	3.50	10.00	24.00	90.00
1½ to 2-in. cal.	2.25	7.50	17.50	65.00
1 to 1½-in. cal.	1.75	5.50	12.50	45.00
⅝ to 1-in. cal.	1.50	4.50	10.00	35.00
½ to ⅝-in. cal.	1.25	3.50	7.50	25.00

Ask for our wholesale list offering a general line of stock, including fruit trees, small fruit plants, shade and ornamental trees, flowering shrubs, hedge plants, Roses, Cannas, etc. Over 1400 acres under cultivation. Please use your printed stationery when requesting wholesale rates.

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BOX 3 SELBYVILLE, DELAWARE

ROBERTS NURSERY CO.
Wholesale growers of Dependable
FRUIT TREES
We solicit your list of wants.
DANSVILLE, N. Y.

Please Mention AMERICAN NURSERYMAN When Writing Advertisers.

L. R. TAYLOR & SONS
Topeka, Kansas
APPLE, PEAR, MAHALEB Seedlings.
APPLE, PEACH, CHERRY, PLUM Trees.
Write for quotations.

Ivan R. Congdon Nursery

CONTRACT GROWING A SPECIALTY

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We offer Malling Stocks I, II, VII, IX, XVI and Quince A, B and C from stool beds originally supplied by East Malling Research Station. Guaranteed true-to-type and free from all disease.

Prices F.O.B. Liss Station, England.

	Per 100	Per 1000
First, 6 to 12 mm.	**$6.00**	**$56.00**
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Also the latest English varieties of fruit trees all on stocks recommended by East Malling Research Station. Price list on application.

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5 to 7 mm.	**$5.00**	**$45.00**
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erymen a long-awaited opportunity to tie in a project with the "Plant America" program, and it is hoped that this can also be made the beginning of a "Plant New Mexico" program.

Mr. and Mrs. Robert L. Hassinger, owners of Professional Landscaping Service, Candelaria road, Albuquerque, returned from a buying trip east shortly before Christmas. They were snowbound at Bristol, Va., for five days. Mrs. Hassinger is president of the Albuquerque Nurserymen's Association.

NEW ORLEANS MEETING.

A vote to carry all members actively engaged in the armed services on the membership rolls without payment of dues for an indefinite period was included in the order of business at the monthly meeting in December of the New Orleans Horticultural Society at Lawrence's restaurant.

President William Kraak, Kraak's Nursery, New Orleans, led a discussion on doubling membership dues, and a vote to this effect raised the fee to $12 per year.

Rene Casadaban, Casadaban's Nurseries, Abita Springs, appointed chairman of a committee on educational features, will arrange for department heads from several state universities to lecture on the growing and handling of plants and flowers at future meetings.

Edwin G. Lott, of the state department of entomology, reported on the possible results of the recent freezing weather and how it might affect plant pests. It was his opinion that the low temperatures would retard the multiplication of insects, but that red spiders would be little affected, as they had been on the increase because of the long, dry autumn experienced in that part of the country.

Members were invited to a holiday party given by Elmer A. Farley at his showrooms and nursery, Covington, La., earlier this month. Manual Zabala will be host to the group in March, and Larry Waguespack in April.

SOUTHWESTERN NEWS.

Melvin Dimitt, Garden City, Kan., is selling his stock and quitting the nursery business because of ill health.

Frank Pflumm, Jr., of Shawnee Nursery & Landscape Co., Shawnee, Kan., was married December 30 to Miss Evelyn Reynolds, of Mission, Kan.

J. W. Johnson is starting a nursery and garden shop at the intersection of U. S. Highway 50 and Gregory boulevard, near Kansas City, Mo.

Cook & Cone, Ottawa, Kan., were the successful bidders on two highway improvement jobs in Norton and Smith counties, Kansas. The contracts totaled $6,118.50.

An Associated Press dispatch dated December 13 tells of an amusing experience of George Sessen, Howell County Nursery, West Plains, Mo. He set fourteen traps to catch the rabbits that had been eating the bark off his young fruit trees. Upon inspection he found all fourteen traps were sprung. In three of them were notes reading: "Dear Owner: Too bad, boy. Better luck next time." The notes were signed Harry Hare.

The Kansas City Association of Nurserymen held its regular monthly meeting December 12 at the Wagon Wheels restaurant, Overland Park, Kan. There was an attendance of about thirty persons. J. J.

SOUTHERN SEED OFFICERS.

At the thirty-second annual convention of the Southern Seedsmen's Association held December 3 to 6 at Memphis, Tenn., Carlyle Jefferson, National Seed Co., Louisville, Ky., was elected president. He succeeds F. M. Barton.

Other officers elected at the convention, held at the Peabody hotel and the City Auditorium, are Richard Simpson, Simpson Nursery Co., Monticello, Fla., first vice-president, and Harold Epting, Epting Distributing Co., Leesville, S. C., second vice-president.

Officers of the associate membership division were elected in accordance with the slate presented by Roy Jones, outgoing chairman. Elected were Lloyd Parr, the Albert Dickinson Co., Chicago, chairman, and R. F. Reese, Hudson Mfg. Co., vice-chairman.

THE marriage of Patricia Houlihan to Thomas J. Dolan took place January 6 at St. Monica's church, Creve Coeur, Mo. Her father, Joseph Houlihan, operates the Houlihan Nursery Co. at Creve Coeur.

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New Books and Bulletins

GARDEN STRUCTURES.

In his first book, "How to Beautify and Improve Your Home Ground," Henry B. Aul, assistant horticulture editor of the New York Herald-Tribune, gave much practical advice and many unusual ideas to home garden builders for their adaptation.

Just off the press, his second book is again a source book of ideas and a collection of detailed plans ready for construction; it is entitled "How to Build Garden Structures," published by Sheridan House, at $3.50.

Each topic or construction idea is treated in two or three pages, with perhaps a couple of drawings and a detailed plan. The various items have been grouped under general chapter headings, such as grills and fireplaces, shelters, arbors, benches, fences and trellises, garden walls, pavings and steps, curbings and catch basins, pools and cisterns, games and birdbaths.

While the book is primarily intended for the home builder who is ambitious to add such features to his garden, the construction plans and the fertile ideas make this a helpful book for the nurseryman or landscape contractor who would value this type of information.

LANDSCAPE SKETCHING.

While not intended for instruction of the landscape designer or architect, but for the layman who wishes to express his artistic urge with the pencil, "Landscape Sketching," by Arthur Black, just published by the McGraw-Hill Book Co., at $4.50, would fit the need of the self-raised landscape nurseryman who wishes he could prepare sketches for his clients.

The book's instruction begins with the fundamental strokes with the pencil and then shows how to apply the strokes to the component parts of the landscape. Fifty-seven drawings illustrate the specific steps and afford models for practice indoors.

The author is director of the Central Park School of Art, New York.

NATURAL HISTORY OF TREES.

Those who are interested in reading of the trees of forest and field, as they are known in nature and in history, will find ample to their liking in the 606-page volume by Donald Culross Peattie, "A Natural History of Trees of Eastern and Central North America," recently published by Houghton Mifflin Co., at $5.

This writer on nature in the popular vein presents this as the first volume in a series on the trees of North America north of Mexico. It is concerned only with the native species.

Each is presented with its common names, range and botanical description in popular phraseology. Then follows the author's comments as to its appearance in the landscape of nature, its uses in lumbering and manufacture, its popular associations and its occurrences in this country's history.

The author claims for the book no encyclopedic completeness or botanical character. His purpose is to provide more interest for the reader in his exploration of the woods. The sketches of leaves and fruits, and of some tree shapes, by Paul Landacre, enhance that interest.

SUDWORTH'S FOREST TREES.

Since books on evergreens, particularly conifers, are not numerous, and most of the good ones are out of print, persons seeking a reference book of that type may like to know that "Forest Trees of the Pacific Slope," by George B. Sudworth, dendrologist in the forest service of the United States Department of Agriculture at the time he compiled the book in 1908, is again in print. This volume of 440 pages, containing

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many illustrations, covers deciduous trees also, but is particularly valuable for its sketches and descriptions of the distinguishing characteristics of west coast conifers. In paper cover, the book is obtainable at $1.50 per copy from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

FOREST MEASUREMENT.

The science of forest tree measurements, or forest mensuration, covering the determination of diameters, heights or volume of standing timber and the prediction of rates of growth, is explained in the third edition of a textbook in the American Forestry Series called "Forest Mensuration." The basis of the book is an explanation of the tools of forest mensuration, with illustrations of their use, and current methods of solving all of the common problems of this kind of measurement. The authors are Donald Bruce, of Mason, Bruce & Girard, consulting foresters, Portland, Ore., and Francis X. Schumacher, professor of forestry, Duke University. The 484-page textbook is published by the McGraw-Hill Book Co., New York, at $5.

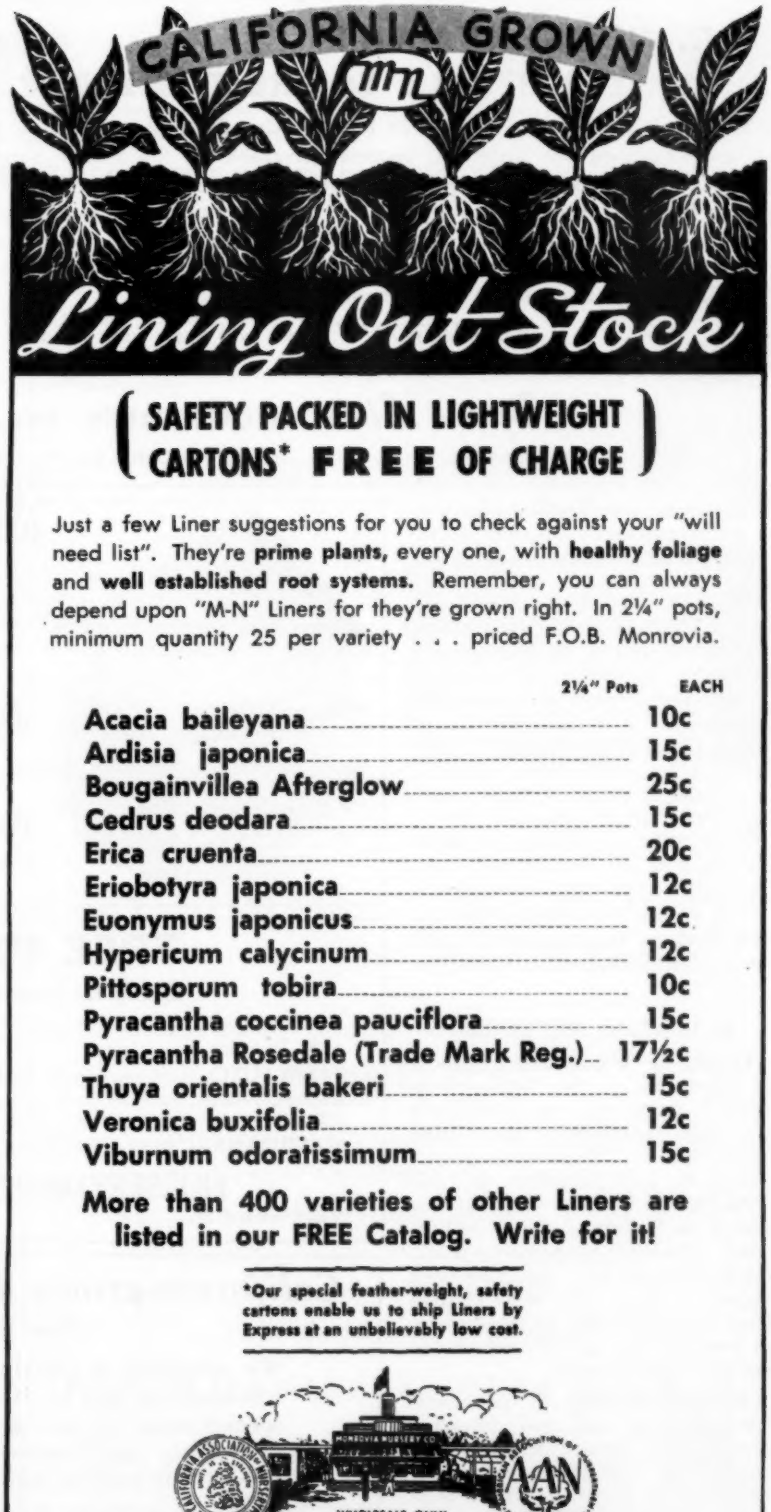
PLANT PHYSIOLOGY REVIEW.

Since 1931 a nonprofit corporation, Annual Reviews, Inc., has devoted itself to the annual publication of critical reviews designed to cover systematically the current literature in certain major fields of science. The Annual Review of Biochemistry, now in its nineteenth volume, has included some material relating to plant physiology, but this year a separate volume has been published, volume I of the Annual Review of Plant Physiology. The editor is Daniel I. Arnon, and the associate editor is Leonard Machlis, both of the University of California.

In this volume of 374 pages appear fifteen reviews by different authors or teams of authors, each with full references to the literature.

According to the foreword of the Annual Review of Plant Physiology, the endeavor will be to stress critical evaluation of published results of research, rather than to strive for encyclopedic completeness. Rotation of reviewers will insure fresh points of view. The contents of each volume are to be built around a core of annual reviews in such fields of activity as inorganic nutrition of plants, photosynthesis and growth substances.

The topics of the articles in the



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Ardisia japonica	**15c**
Bougainvillea Afterglow	**25c**
Cedrus deodara	**15c**
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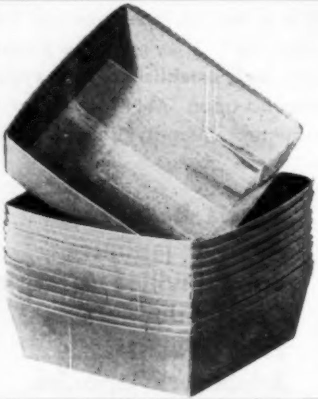
1950 volume are: Mineral nutrition of plants; carbon dioxide fixation by green plants; influence of light on plant growths; plant tropisms; organic acid metabolism; transformation of sugars in plants; growth-regulating substances in horticulture; herbicides; physiology of cell wall growth; post-harvest physiology and biochemistry of fruits; respiration of higher plants; nitrogenous constituents of plants with special reference to chromatographic methods; water relations of plant cells and tissues; soil moisture in relation to plant growth, and soil chemistry in relation to inorganic nutrition of plants.

This volume is available from Annual Reviews, Inc., Stanford, Calif., for $6.15, including shipping charges.

BULLETINS RECEIVED.

Habits, life history and evidences of infestation of the Guenne and Walker inchworms or spanworms are aptly presented in the 4-page leaflet, No. 51, "Hemlock Loopers," written by J. V. Schaffner, Jr., and published by the New England section of the Society of American Foresters. Although both species favor hemlock as their host, they have been known to attack other types of trees from Canada to the southern states so severely that natural controls are not imminent enough.

Recommendations of perennials for both sunny and shady locations are given in "Some Interesting Perennials for the Home Grounds," circular 370, written by A. O. Rasmussen and published by the agricultural extension service of Pennsylvania State College. The 16-page booklet covers all features of perennial planting, from preparing the soil to propagating the plants by seeds and divisions. Especially valu-



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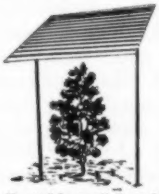

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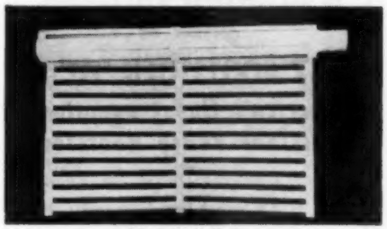

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able to tyro gardeners are the 5-page list of reliable hardy herbaceous perennials and the color guide giving harmonizing and contrasting colors. Neophyte growers will find further information in the extension service's five 4-page leaflets, Nos. 137, 138, 139, 140 and 141, which give the essential requirements for the culture of delphiniums, gladioli, peonies, hardy chrysanthemums and dahlias, respectively. Controls for the specific diseases and insects affecting these plants are but a few of the features presented, along with such data as the proper ways to disbud, to dig and to store the different plants. Each leaflet contains pictures and line drawings of the plant discussed and some of the insects and diseases harmful to it.

The Dutch elm disease is the subject of a 12-page extension bulletin, No. 138, recently issued by the agricultural extension service, University of Maryland, College Park, on "Dutch Elm Disease." In it the authors, L. O. Weaver, W. F. Jeffers and T. L. Bissel, give a brief history of the disease, especially its spread in Maryland, describe symptoms and the susceptibility of elm species and varieties, list causal agents, describe the life history of the Dutch elm fungus showing its relationship to

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bark beetles, tell where diagnosis of the disease may be made and describe methods of control.

WAGE-HOUR BULLETIN.

An explanation of how retail and service establishments may qualify for overtime pay exemptions under the fair labor standards act is set forth in a wage-hour interpretative bulletin entitled "Retail and Service Establishments and Related Exemptions." The interpretative bulletin has been described by William R. McComb, administrator of the wage and hour and public contracts division, as a "practical guide to employers and employees."

The most important exemption is the one which relieves employers from the minimum wage and overtime pay requirements. An employer must "show affirmatively" that he qualifies for the exemption, the bulletin states. His establishment must meet all of the following tests: (1) It must be engaged in the sale of services, goods or both; (2) its total dollar volume must be at least seventy-five per cent from sales of goods or services which are both retail sales or services and not for resale.

every now and then we get a flower

The other qualification on dollar volume states that more than fifty per cent must be from sale of goods or services which are made within the state in which the establishment is located.

A second exemption applicable to local establishments under the January, 1950, revision of the wage-hour law is the section which exempts all employees of a retail establishment which otherwise qualifies even though it makes or processes on its own premises the goods it sells.

Such an establishment, however, must be recognized as a whole as a retail establishment in the particular industry. More than eighty-five per cent of its annual dollar volume of sales must be made within the same state.

About 7,000,000 employees in the retail trade establishments and about 5,000,000 in service industries are affected by these exemptions. All but a small proportion of the retail and service establishments will be removed from the jurisdiction of the minimum wage and overtime pay requirements of the wage-hour law.

GROWING grounds of more than five acres are largely devoted to field-grown evergreens at the new wholesale nursery opened by Arden Showalter at 8524 Norwalk avenue, Whittier, Calif.

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Roses

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Hillsboro, Oregon

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★ When packing bare roots or deciduous stock for shipment or storage, use **Wood Feathers** brand **cedar shavings (red cedar shingle tow)**. There are 3 reasons for **Wood Feathers'** superiority:
1. Large moisture-absorbing capacity.
2. Will retain moisture for a long period of time.
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Wood Feathers
BRAND
CEDAR SHAVINGS
P. O. BOX 98 NORTH PORTLAND, ORE.

ROSES—TREE ROSES

A fine selected list including patented varieties. Highest quality — all field-grown.

Write for list and prices.

PACIFIC NORTHWEST ROSE NURSERY
P. O. Box 261 GRESHAM, ORE.

COVER ILLUSTRATION.

Hedera helix baltica.

Hedera helix, the English ivy, is a common broad-leaved evergreen vine that is probably known to all readers of the American Nurseryman. It is a high climbing vine that may reach ninety feet at maturity, climbing by rootlike holdfasts. Hedera is the ancient Latin name for ivy, and helix is taken from the Greek word meaning spiral.

The English ivy is a native of Europe and has been cultivated since ancient times. It is represented in cultivation by a large number of varieties, probably forty or more, varying mostly in shape, size and color of leaf.

The English ivy varies considerably from the juvenile to the adult form. The juvenile form is sterile, climbs readily by rootlike holdfasts and has lobed leaves. The adult form is fruitful and more stiffly branched. The rootlike holdfasts are usually absent, and the leaves are mostly unlobed.

The leaves of the sterile branches are 3 to 5-lobed and up to three and one-half to four inches long. They are dark green above, often with whitish veins, and paler yellowish-green below. The leaves on the fertile branches are of approximately the same size, but they are entire and rounded or nearly square at the base.

Hedera helix baltica differs from the species by having somewhat smaller leaves, with the white veins more prominent, and is more hardy than the species. Actually, in general appearance it does not differ greatly from the species and is not the most hardy of the English ivy varieties. The flowers are of no importance ornamentally. The fruits are black berries effective on the fruiting branches in the fall.

The Baltic ivy, like most varieties of English ivy, is easily cultivated, being adaptable to a wide range of soil types. Since the plants are subject to winter leaf burn, they should be used in shaded situations as ground covers or on the north or east sides of houses as vines. English ivy and its varieties are free from serious insects and diseases. Propagation is accomplished by cuttings.

The Baltic English ivy is recommended in preference to the common English ivy and is useful in landscape plantings as a broad-leaved evergreen vine or ground cover, but should be planted with some protection.

L. C. C.

PORTLAND WHOLESALE NURSERY CO.
306 S. E. 12th AVENUE
Avery H. Steinmetz
Paul E. Van Allen
PORTLAND 14, OREGON

Although many items are completely sold out there still is lots of good stock available.

We invite inquiries for our January Surplus List.

Quality Stock
CONIFERS AND BROAD-LEAVED EVERGREENS
SHADE AND FLOWERING TREES
FRUIT TREE SEEDLINGS
FRUIT TREES
DECIDUOUS SHRUBS
VINES AND BULBS
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NURSERY SUPPLIES
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FAIRVIEW, OREGON
Wholesale only

FRUIT TREE SEEDLINGS
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Constant Vigilance Results in Quality Stock

Combination carloads to Eastern distributing points.

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Eastern Representative:
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MILTON NURSERY CO.
MILTON *Since 1878* OREGON

Fruit Tree Seedlings
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ORNAMENTALS

European Mt. Ash, 2-yr. whips
Norway Maple, 3 to 4 ft., trans. whips
Paul's Scarlet Hawthorn, branched
Prunus Triloba, tree and bush form
Pyramidal Birch, branched
Red Maple. Special budded and regular transplanted whips.
Offic. Rubra Peony, 3 to 5-eye div.

Combination carloads to Eastern distributing points during January and February.

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EVERGREEN LINERS

Azaleas, Conifers, Heathers, etc. Available in rooted cuttings and field transplants grown in sandy soil.

Write for descriptive, illustrated catalog.

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Wholesale Propagators and Growers of Evergreen Liners
AURORA, OREGON

DOTY & DOERNER, Inc.
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FRUIT TREES and GRAPEVINES

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MAZZARD and MAHALEB

Seeds gathered from certified trees.

COLUMBIA & OKANOGAN NURSERY CO.
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Rate: 25 cents per line, each insertion. **Minimum order, $2.00**

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AZALEAS.

Hinodegiri and other varieties, including Kaempferi and Glenn Dale Hybrids. Nice, bushy plants. Prices of Hinodegiri and most Kurumes, packing additional:

	Per 100
8 to 10 ins.	$ 90.00
10 to 12 ins.	115.00
12 to 15 ins.	150.00

Add 10c per plant for burlap wrapping.

Send for complete list of Azaleas, Broad-leaved Evergreens, Shrubs, Trees, etc.

TANKARD NURSERIES
Exmore, Virginia

100,000 AZALEAS.

Hinodegiri, Alice, Mary, Purple King, Hinomayo, Indica Alba, Kaempferi Flame, Amoena and others.

Very heavy rooted cuttings, ready now.
$6.00 per 100; $50.00 per 1000.
Transplanted rooted cuttings,
ready about May.
$12.50 per 100; $100.00 per 1000.
Packing and shipping extra.

DEKALB NURSERIES, INC.
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JAPAN'S FINEST AZALEAS.
DIRECT FROM KURUME, JAPAN.

2 and 3-yr., with flower buds for landscaping or forcing.

30c and 50c each, F.O.B. Seattle.

Send for list of names and special prices by case lot. Delivery approximately 60 days.

LAKE SAMMAMISH EVERGREEN NURSERY
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AZALEA ROOTED CUTTINGS.

Hinodegiri, Coral Bells, Pink Pearl, Sweet Briar, Amoena, Flame, $6.00 per 100, $50.00 per 1000.

Hino-Crimson, $10.00 per 100, $85.00 per 1000.

JOHN WIGMORE
Norman Ave. at Cambridge Station
Riverside Park, Riverside, N. J.

BERRY PLANTS

BERRIES.

Thornless Boysenberries, No. 1 tips, $4.50 per 100, $30.00 per 1000; in lots of 3000 or more, $25.00 per 1000. 2-yr. transplants, $9.00 per 100.

Cumberland Raspberries, No. 1 tips, $3.50 per 100, $30.00 per 1000; in lots of 3000 or more, $25.00 per 1000.

Raspberries, 2-yr. transplants, Bristol, Cumberland, Latham, $7.50 per 100.

WAYNESBORO NURSERIES
Waynesboro, Virginia

STRAWBERRY PLANTS.

Spring-dug, true-to-name, in A-1 growing condition.

	Per 1000
Gem Everbearing	$11.00
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Robinson	9.00

ROBERTS STRAWBERRY NURSERY
Rt. 7 Kalamazoo, Mich.

RED RASPBERRY PLANTS.

	Per 100	Per 1000
Latham	$5.00	$40.00
Indian Summer Everbearing	6.00	50.00

State-inspected No. 1 sucker plants, fresh-dug as ordered. Cash, please.

PAYNE DAHLIA FARMS
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BLACKBERRIES.
Eldorado, Blowers, Early Harvest.
BLACK RASPBERRY TRANSPLANTS.
Cumberland, Logan, Bristol.

Write for prices along with complete list of berries and grapes.

CONGDON'S WHOLESALE NURSERY
North Collins, N. Y.

EVERBEARING GEM STRAWBERRIES.
NEWBURGH RASPBERRY PLANTS.
Write for 1951 prices.
DAVIS PLANT FARM
Hamilton, Mont.

BULBS and TUBERS

PEONIES.

Edulis Superba, pink; de Verneville, white with crimson center; Felix Crousse, red. 3 to 5-eye div., $22.50 per 100, 25 at the 100 rate. Mixed colors, not labeled separately, $20.00 per 100. Cash with order, express collect.

ANDREWS' NURSERY
Box 442 Chapel Hill, N. C.

DAHLIA ROOTS.

We grow many acres of standard varieties. Write today for wholesale price list.

PAYNE DAHLIA FARMS
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HOLLAND-GROWN BULBS.

DARWIN TULIPS, 11 to 12 cm., $5.00 per 100. William Pitt (red), Rose Copland (rose), Pride of Haarlem (red), Bartigon (red), Yellow Giant (yellow), William Copland (lavender).

HYACINTHS, 16 to 17 cm., $12.00 per 100. Gertrude (pink), L'Innocence (white), Bismarck (blue), City of Haarlem (yellow), King of the Violets (purple).

MUSCARI (Grape Hyacinth), 7 to 8 cm., $2.00 per 100.

DUTCH IRIS, $5.00 per 100. Yellow Queen (yellow), 8 to 9 cm.; Excelsior (white), 7 to 8 cm.

WEDGWOOD IRIS, 9 to 10 cm., $5.00 per 100.

DAFFODILS (Rounds), King Alfred, $6.00 per 100.

BENTON COUNTY NURSERY CO., Inc.
Rogers, Ark.

Write for complete list of Tuberous-rooted Begonias, Gloxinias, Fancy-leaved Caladiums, Tuberoses, Gladioli, Dahlias, Amaryllis, etc.

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HARDY NORTHERN-GROWN LILY BULBS.

New, rare, scarce and unusual as well as standard varieties. Send for your free copy. New wholesale list now ready.

J. HENDRIKS, Grower Portage, Mich.

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HUSKY POT-GROWN CAMELLIAS.
1½ and 2-yr. from 4 and 5-in. pots.
We pay the express to your address
To most distant parts of U.S.A. when ordered by the case of 50 each.
6 to 8 ins., 55c each DELIVERED.
8 to 12 ins., 65c each DELIVERED.
12 to 15 ins., 75c each DELIVERED.

Alba Plena Fimbriata
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Arajishi
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Debutante
Donkelaari English
Duchess of Sutherland
Emp. of Russia
Flame
Fred Sander
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The Top Name in Camellias—Tormey's.

Strains of Proven Merit—Grown right with the right start in life—They live to grow so yours and our will live to be a continuous and profitable growing business, too.

TORMEY'S
Drawer 428, Temple City, Calif.
"For 15 Years—The Best from the Far West"
Get On Our Mailing List.

BIG CAMELLIA PLANTS.

Well branched, to 4 feet tall, all over 5 years old. Priced for quick disposal at far below their value. Order now before express rates go up—and WE WILL PAY THE EXPRESS TO YOUR ADDRESS on these plants, Growing in Containers, when shipped 10 Plants to the Case.

$47.50, the delivered price, per 10 plants of these six fine proven nonshatter corsage kinds.

Pink Casablanca Red Daikagura
Pink Debutante Var. Daikagura
New Flesh-pink Daikagura High Hat
New Pink Purity General Patton

Send for lists of younger plants, of many other varieties, of Tormey's strains.

TORMEY'S, P. O. Drawer 428
Temple City, Calif.
For 15 years, the best from the Far West.

EVERGREENS

JUNIPER GRAFTS.

For spring delivery, ready for field and cultivation.

	Per 100	Per 1000
J. chin. pfitzeriana	$37.50	$350.00
J. chin. pfitzeriana aurea	40.00	375.00
J. c. pfitzeriana armstrongi	40.00	375.00
J. chin. pfitzeriana compacta	40.00	375.00
J. chin. sargenti, green	40.00	375.00
J. chin. sargenti, blue	40.00	375.00
J. chin. keteleeri	40.00	375.00
J. virginiana canaerti	40.00	375.00
J. vir. pyramidiformis	40.00	375.00
J. virginiana glauca	40.00	375.00
J. virginiana burki	40.00	375.00
J. vir. glauca globosa*	65.00	....

*(Our new blue globosa;
first time on market.)

Terms: Cash with order, packing free; 25 per cent deposit with order, packing at cost, balance when shipped.

ARROW WOOD NURSERY
Box 166 Warsaw, Ky.

LINING-OUT STOCK.

	Per 100	Per 1000
Scotch Pine, 2-0, 3 to 8 ins.	$ 3.00	$ 25.00
Scotch Pine, Riga, 2-0, 3 to 6 ins.	3.50	30.00
Austrian Pine, 2-0, 3 to 6 ins.	4.00	35.00
Mugho Pine (Dwarf), 2-0, 2 to 4 ins.	3.00	25.00
Mugho Pine (Dwarf), 3-0, 3 to 6 ins.	5.00	45.00
Mugho Pine (Dwarf), 2-1, 2 to 4 ins.	5.00	45.00
Table Mountain Pine, 2-0, 3 to 6 ins.	2.50	20.00
Table Mountain Pine, 1-1, 3 to 6 ins.	4.00	35.00
Norway Spruce, 3-0, 3 to 6 ins.	3.50	27.50
Norway Spruce, 2-1, 3 to 6 ins.	5.50	50.00
Norway Spruce, 2-2, 6 to 10 ins.	8.00	75.00
Colorado Blue Spruce, 2-1, 2 to 4 ins.	4.50	40.00
White Spruce, 2-0, 3 to 6 ins.	3.00	25.00
Black Hills Spruce, 3-0, 2 to 4 ins.	3.00	27.50
Black Hills Spruce, 3-1, 2 to 6 ins.	5.00	45.00
Black Hills Spruce, 2-2, 3 to 6 ins.	6.00	65.00
Black Hills Spruce, 3-2, 4 to 8 ins.	7.00	65.00
Black Spruce, 2-3, 8 to 18 ins.	12.00	110.00
Balsam Fir, 3-0, 2 to 4 ins.	3.00	27.50
Oriental Arborvitae, 1-2, 6 to 18 ins.	10.00	85.00
Dwarf Oriental Arborvitae, 1-2, 6 to 12 ins.	10.00	90.00
Pyramidal Oriental Arborvitae, 1-2, 6 to 12 ins.	10.00	90.00

For complete list write to
JOHN G. ZELENKA
Rt. 2, Box 293 Grand Haven, Mich.

SEEDLINGS FOR SPRING.	Per 100	Per 1000
Scotch Pine, 2 yrs., 4 to 8 ins.	$ 5.00	$25.00
Scotch Pine, 2 yrs., 2 to 4 ins.	4.00	15.00
Scotch Pine, 2 yrs., 1 to 2 ins.	2.00	10.00
Austrian Pine, 2 yrs., 4 to 6 ins.	5.00	25.00
Austrian Pine, 2 yrs., 2 to 4 ins.	4.00	15.00
Austrian Pine, 2 yrs., 1 to 2 ins.	2.00	10.00
White Pine, 2 yrs., 2 to 4 ins.	4.00	20.00
White Pine, 3 yrs., 5 to 8 ins.	7.00	30.00
Norway Spruce, 2 yrs., 2 to 4 ins.	4.50	20.00
Norway Spruce, 3 yrs., 5 to 10 ins.	7.00	40.00
White Spruce, 2 yrs., 2 to 4 ins.	5.00	25.00
White Spruce, 3 yrs., 4 to 8 ins.	8.00	40.00
Colorado Blue Spruce, 2 yrs., 2 to 4 ins.	5.00	25.00
Colorado Blue Spruce, 3 yrs., 3 to 7 ins.	8.50	40.00
American Red Pine, 2 yrs., 2 to 5 ins.	5.00	35.00
American Arborvitae, 3 yrs., 4 to 8 ins.	7.00	35.00
Douglas Fir, 2 yrs., 3 to 5 ins.	5.50	25.00
TRANSPLANTS.		
Scotch Pine, 2-1, 5 to 8 ins.	7.50	45.00
Scotch Pine, 2-1, 3 to 5 ins.	7.00	35.00
Austrian Pine, 2-1, 2 to 6 ins.	7.50	45.00
Norway Spruce, 2-1, 3 to 5 ins.	7.50	40.00
Arborvitae, 3-3, 10 to 18 ins.	35.00	...

Cash, or 25 per cent deposit with order, balance C.O.D. 5 per cent discount on quantities of 25,000.

SAM DIBLE NURSERY Shelocta, Pa.

EVERGREEN CUTTINGS.
Rooted, Plant Bands and Bed Liners.

ROOTED.	Each per 10	100	1000
Arborvitae, pyramidal	$0.10	$0.09	$0.08
Arborvitae, globe	.10	.09	.08
Juniperus pfitzeriana	.12	.11	.10
Juniper, Irish	.12	.11	.10
Taxus cuspidata, 6 to 10 ins.	.10	.09	.08
Taxus hicksi, 6 to 10 ins.	.10	.09	.08
Taxus capitata, 4 to 6 ins.	.15	.14	.12
Taxus capitata, 8 to 10 ins.	.25	.23	.20
PLANT BANDS.			
Arborvitae, pyramidal	.20	.18	.16
Arborvitae, globe	.20	.18	.16
Juniperus pfitzeriana	.20	.18	.16
Taxus cuspidata, 6 to 10 ins.	.18	.15	.13
Taxus hicksi, 6 to 10 ins.	.18	.15	.13
Taxus capitata, 8 to 10 ins.	.35	.32	.28
1-YR. BED.			
Arborvitae, pyramidal	.20	.18	.16
Arborvitae, globe	.20	.18	.16
Juniperus pfitzeriana	.20	.18	.16
Taxus cuspidata, 6 to 10 ins.	.18	.15	.13
Taxus hicksi, 6 to 10 ins.	.18	.15	.13

The Taxus capitata (leaders) is used only. 300 at 1000 rate, no charge for packing.

DRAKE'S NURSERIES
G4342 Branch Rd. Flint, Mich.

CUTTINGS.

Beauty bush (Kolkwitzia), unrooted cuttings, new wood; Pfitzer Juniper cuttings, not trimmed, $6.00 per 500; $10.00 per 1000. Cash with order; express collect.

ANDREWS' NURSERY
Box 442 Chapel Hill, N. C.

LINING-OUT LIST.

We offer the following potted liners for shipment to you in New Bird Neponset Paper Pots at the slight added cost as per prices in the first column.

Potted liners priced in the second column will be packed by the ordinary method used by most nurseries without the added protection of paper shipping pots.

Bare-root liners and liners in Bird Vita-Bands are also priced in the second column.

The 1000 rate applies on all orders; therefore please order in multiples of 25 or more.

Prices each per 1000	In Paper Pots	Without Paper Pots
Biota aurea nana, Berckmans		
*2¼-in. pots	$0.20	$0.19
2½-in. pots, extra-strong.	.22½	.21½
Biota aurea nana globosa		
*2¼-in. pots	.18	.17
Biota bonita		
2¼-in. pots, extra-strong..	.18	.17
2½-in. pots, extra-strong..	.20	.19
Biota bakeri, Biota excelsa and Biota sibyli		
3 to 4 ins., liners	..	.10
4 to 6 ins., liners	..	.12
2¼-in. pots, extra-strong..	.18	.17
2½-in. pots, extra-strong..	.20	.19
Cedrus deodora		
6 to 8 ins., liners	..	.19
8 to 12 ins., liners	..	.21
2¼-in. pots	.23	.22
2½-in. pots	.25	.24

Note: Cedrus deodora is a scarce item. Due to crop failure no fresh seeds will be available in 1951. Place your orders now while still available.

	In Paper Pots	Without Paper Pots
Chamaecyparis lawsoniana allumi (Blue Lawson Cypress)		
2¼-in. pots	.19	.18
2½-in. pots	.20	.19
Cunninghamia lanceolata, blue		
2¼-in. pots	.25	.24
Italian Cypress, fastigiata		
2¼-in. pots	.25	.24
Juniperus chinensis pfitzeriana		
4 to 6 ins., liners	..	.12
Juniperus chinensis pfitzeriana and Juniperus chinensis pfitzeriana compacta		
2¼-in. pots, extra-strong..	.18	.17
2½-in. pots, extra-strong..	.20	.19
Juniperus chinensis pfitzeriana nana		
2¼-in. pots	.25	.24
Juniperus chinensis albo-variegata		
2½-in. pots	.23½	.22½
Juniperus chinensis fortunei		
6 to 6 ins., liners	..	.15
2¼-in. pots	.18	.17
Juniperus chinensis sylvestris		
2¼-in. pots	.22½	.21½
2½-in. pots	.25	.24
Juniperus chinensis viridifolia, often called Juniperus densa glauca		
2¼-in. pots	.25	.24
2½-in. pots	.26	.25
Juniperus communis columnaris compacta and Juniperus communis kiyonoi		
4 to 6 ins., liners	..	.12
2¼-in. pots	.16	.15
2½-in. pots	.18	.17
Juniperus excelsa stricta		
4 to 6 ins., liners, TT	..	.12
2¼-in. pots	.18	.17
Juniperus glauca hetzi		
2¼-in. pots	.18	.17
2½-in. pots	.20	.19
Juniperus hibernica fastigiata		
2¼-in. pots	.18	.17
2½-in. pots	.20	.19
Juniperus japonica procumbens		
2¼-in. pots	.19	.18
2½-in. pots	.21	.20
Juniperus virginiana keteleeri		
2¼-in. pots	.25	.24
Taxus cuspidata		
Taxus media andersoni		
Taxus media hicksi		
4 to 6 ins., liners	..	.12
2¼-in. pots	.16	.15
2½-in. pots	.19	.18
Thuja occidentalis pyramidalis (American Pyramidal Arborvitae)		
4 to 6 ins., liners	..	.15
2¼-in. pots	.18	.17
Berberis sargentiana		
1¾ x 2½-in. Vita-Bands...	..	.15
2¼-in. pots	.16	.15
2½-in. pots	.18	.17
Buxus sempervirens (English Boxwood)		
3 to 4 ins., liners	..	.06
4 to 6 ins., liners	..	.07½
1¾ x 2½-in. Vita-Bands...	..	.15
Camellia sasanqua Maiden's Blush		
2¼-in. pots	.13	.12
Elaeagnus fruitlandi		
3 to 4 ins., liners	..	.12
4 to 6 ins., liners	..	.15
2½-in. pots	.19	.18
Euonymus carrierei		
4 to 6 ins., liners	..	.08
2¼-in. pots	.13	.12
Illicium anisatum		
2¼-in. pots	.18	.17
2½-in. pots	.20	.19
Ilex crenata convexa (bullata)		
1½ x 1½-in. Vita-Bands...	..	.17
2½-in. pots	.21	.20

(Continued in next column.)

(Concluded from previous column.)

	In Paper Pots	Without Paper Pots
Ilex crenata rotundifolia		
2¼-in. pots	$0.16	$0.15
2½-in. pots	.18	.17
Ilex cornuta burfordi		
2¼-in. pots	.15	.14
2½-in. pots	.17	.16
Ligustrum lucidum compactum		
2 x 2½ in. Vita-Bands.....	..	.12
2½-in. pots	.13	.12
2 x 3-in. Vita-Bands	..	.15
Magnolia grandiflora		
2½-in. pots	.16	.15
Nandina domestica		
1¾ x 2½-in. Vita-Bands...	..	.07
2¼-in. pots	.09	.08
2½-in. pots	.11	.10
Osmanthus aquifolium		
2¼-in. pots	.19	.18
2½-in. pots	.21	.20
Photinia glabra		
*2¼-in. pots	.20	.18
Photinia serrulata		
2¼-in. pots	.19	.18
2½-in. pots	.21	.20
Pyracantha belli		
2¼-in. pots	.16	.15
2 x 2½-in. Vita-Bands	..	.15
2½-in. pots	.18	.17
Viburnum tinus		
*4 to 6 ins., liners	..	.06
Cornus florida		
8 to 12 ins., liners	..	.05
8 to 12 ins., grafting grade	..	.07
Kerria japonica pleniflora		
*6 to 8 ins., liners	..	.05
Lonicera Flaming Beauty		
6 to 8 ins., liners	..	.15
8 to 12 ins., liners	..	.18
Spiraea Anthony Waterer		
4 to 6 ins., liners	..	.05
1¾ x 2½-in. Vita-Bands..	..	.08
Spiraea reevesiana flore-plena		
4 to 6 ins., liners	..	.08
6 to 8 ins., liners	..	.10
8 to 12 ins., liners	..	.12
Weigela Eva Rathke		
4 to 6 ins., liners	..	.07
2½-in. pots	..	.10

See our display ad illustrating liners in this issue.

Special Notice: Items marked by asterisk (*) for delivery Spring, 1951. All items not so marked are ready for shipment now or later to suit customer's requirements. (Prices subject to change without notice.)

T. G. OWEN & SON, INC.
Columbus, Miss.

JUNIPERS.

	Per 100
ANDORRA	
9 to 12 ins., TT, 2-yr., field-grown	$35.00
12 to 15 ins., TT, 2-yr., field-grown	45.00
HETZI	
9 to 12 ins., TT, 2-yr., field-grown	40.00
12 to 15 ins., TT, 2-yr., field-grown	50.00
15 to 18 ins., TT, heavy, field-grown	70.00
PFITZER	
9 to 12 ins., TT, 2-yr., field-grown	40.00
12 to 15 ins., TT, 2-yr., field-grown	50.00
15 to 18 ins., TT, heavy, field-grown	70.00
PFITZER, GOLDEN	
9 to 12 ins., TT, 2-yr., field-grown	40.00
12 to 15 ins., TT, 2-yr., field-grown	50.00

C.O.D. shipments must be accompanied by 25 per cent cash. Quantity discount—10 per cent on 1000 lots.

All our lining-out evergreens are dug bare root, puddled and packed in moss. Packing and boxing at cost.

NEBRASKA NURSERIES, Inc.
4815 "O" St. Lincoln 8, Neb.

EVERGREEN LINERS.

	R.C. Per 1000	Pot Plants Per 1000
Baker Arborvitae	$ 80.00	$150.00
Excelsa Arborvitae	80.00	150.00
Berckmans Arborvitae	100.00	170.00
Blue Cone Arborvitae	80.00	150.00
Bonita Arborvitae	80.00	150.00
Golden Ball Arborvitae	100.00	170.00
Newarki Arborvitae	90.00	160.00
Globe Arborvitae	80.00	150.00

Heavily rooted cuttings from Vermiculite are ready now. Pot plants now in greenhouse will be ready for delivery March 1 or later, from 2¼-in. pots, or from 2x2x3 Bird bands.

CARTWRIGHT NURSERIES
Collierville, Tenn.

LINING-OUT STOCK.

	Per 100
Juniper, Von Ehron, 2½-in. pots, 9 to 12 ins.	$30.00
Juniper, Andorra, 2½-in. pots, 6 to 8 ins.	20.00

Above potted liners are now growing in greenhouse. Shipment May 1 to 15.

Juniperus pfitzeriana, XX, field, 8 to 12 ins.	40.00

Cash with order, packing free.

DAMASCUS NURSERIES
Box 138 Damascus, Ohio

JUNIPER GRAFTS.

Canaerti, burki, glauca, keteleeri and pfitzeriana, on virginiana understock. $40.00 per 100 at 100 rate, and $37.50 per 100 at 1000 rate, 250 take 1000 rate. Terms: One-fourth cash with order and balance before shipping, plus boxing charges at cost. All cash with order earns free boxing. Grafts will be in short supply this season, so you had better get your order in early.

FLORENCE NURSERY
Florence, Ky.

EVERGREEN SEEDLINGS.

All seedlings run of beds.

	Per 100	Per 1000
Pine, Austrian,		
2-yr. sdlgs., 3 to 5 ins.	$3.50	$25.00
Pine, Mugho,		
2-yr. sdlgs., 1 to 3 ins.	3.50	25.00
Pine, Ponderosa,		
2-yr. sdlgs., 2 to 5 ins.	3.50	20.00
3-yr. sdlgs., 6 to 10 ins.	5.00	40.00
Pine, Scotch,		
2-yr. sdlgs., 3 to 6 ins.	3.50	25.00
Spruce, Black Hills,		
2-yr. sdlgs., 1 to 2 ins.	3.50	25.00
Spruce, Colorado,		
2-yr. sdlgs., 1 to 3 ins.	3.50	25.00
3-yr. sdlgs., 4 to 10 ins.	5.00	40.00
Spruce, Norway,		
2-yr. sdlgs., 2 to 5 ins.	2.50	20.00
3-yr. sdlgs., 4 to 12 ins.	5.00	35.00
Spruce, White,		
2-yr. sdlgs., 2 to 4 ins.	2.50	20.00
Fir, Douglas,		
2-yr. sdlgs., 2 to 6 ins.	2.50	20.00

HEASLEY'S NURSERIES
Telephone Butler 46-359
Freeport Rd. Butler, Pa.

EVERGREEN LINERS.

	Per 100	Per 1000
American Arborvitae,		
9 to 12 ins., T.	$25.00	$225.00
Andorra Juniper, 7 to 10 ins., T	17.00	150.00
Douglas Fir, 8 to 12 ins., T...	20.00	.....
Hetzi Glauca Juniper,		
12 to 15 ins., TTT	60.00	550.00
7 to 10 ins., T.	18.00	175.00
Irish Juniper, 8 to 12 ins., TT.	23.00	225.00
Irish Juniper, 12 to 15 ins., TT	35.00	.....
Mugho Pine, 9 to 12 ins., TT..	30.00	295.00
Mugho Pine, 8 to 10 ins., T....	20.00	195.00
Norway Spruce, 9 to 12 ins., TT	25.00	225.00
Pyramidal Arborvitae,		
1 to 1½ ft., TTT	60.00	.....
9 to 12 ins., TT.	40.00	.....
Pfitzer Juniper, 6 to 9 ins., T..	20.00	.....
Savin Juniper, 6 to 9 ins., TT..	18.00	.....

These are high-quality transplants from the field. We are sure you will like them. Cash with order, free packing. Ask for our complete list. Member A.A.N. West Virginia's largest growers.

WHERRY'S NURSERIES
St. Marys, West Virginia

JUNIPER GRAFTS.

Canaerti, Glauca, Burki, Keteleeri, Hetzi, Smithi and Pfitzeriana on Virginiana understock. Price, $40.00 per 100, or $37.50 per 100 at the 1000 rate. 250 take the 1000 rate.

Terms: All cash with order earns free packing, or one-fourth cash and balance before shipping date, plus packing charges at cost.

We invite comparison with grafts of any other company. Remember, when better grafts are made, Crume will make them. We are never able to supply our full demand. Be wise and early, for the early bird catches the worm.

T. C. CRUME NURSERY & LDSC. CO.
Highway 42 Florence, Ky.

LINING-OUT STOCK.
POTTED EVERGREENS.

Variety and height.	Per 100
Juniperus depressa plumosa, 6 to 8 ins.	$17.50
Juniperus hibernica, 6 to 8 ins.	17.50
Juniperus pfitzeriana, 8 to 10 ins.	30.00
Juniperus sabina, 6 to 8 ins.	17.50
Taxus cuspidata, 6 to 8 ins.	22.50
Taxus hicksi, 6 to 8 ins.	25.00

Packing without cost when cash accompanies order.

The HOLLANDIA GARDENS, Inc
South Vienna, Ohio

		Each
1500	White and Norway Spruce, 3 to 4 ft., well filled	$2.00
1000	White and Norway Spruce, 4 to 5 ft., well filled	2.50
500	Pfitzer Juniper, 18 to 24 ins., heavy	2.00
400	Pfitzer Juniper, 24 to 30 ins., heavy	2.25
700	Woodwardi Globe Arb., 18 ins., heavy	1.25
1000	Hemlock, 3 to 4 ft., well filled	3.00
3000	Chinese Chestnut, 2 to 3 ft., 50c; 3 to 4 ft., 60c; 4 to 5 ft., 70c each.	

HOME NURSERY CO.
Fort Gay, W. Va.

LINERS—TWICE TRANSPLANTED.

	Each
Taxus, spreading, 10 to 15 ins., 4-yr.	$0.45
Taxus nana brevif., 8 to 12 ins., 4-yr.	.50

Above stock pruned to sizes indicated

Tsuga canadensis, 12 to 15 ins., 6-yr.	.30
Tsuga canadensis, 15 to 18 ins., 6-yr.	.40

Minimum: Lots of 25. 100 assorted your choice, 10 per cent discount. 250 assorted, 15 per cent discount.

Cash, please. F.O.B. Packing free.

MOUNTAINVILLE FOREST NURSERIES
Lebanon, N. J.

UNROOTED CUTTINGS OF PFITZER JUNIPER, 6 to 10 ins. long, not trimmed. Moss packed; express only. $10.00 per 1000. Cash with order.

KRONE'S FLOWER SHOP
4221 Grand Ave. Fort Smith, Ark.

EUONYMUS RADICANS VEGETUS.

	Per 100	Per 1000
Strong rooted cuttings	$8.00	$75.00

PLANE VIEW NURSERY
Newport, R. I.

EVERGREENS—Continued

LINING-OUT STOCK.
1-yr. bedded.

	Per 100	Per 1000
Taxus hicksi	$15.00	$125.00
Taxus cuspidata	15.00	125.00
Taxus hatfieldi	17.50	150.00
Taxus brevifolia	20.00	200.00
Tsuga canadensis,		
2-yr. tr., 4 to 6 ins.	7.00	60.00
3-yr. tr., 6 to 9 ins.	11.00	100.00
4-yr. tr., 9 to 12 ins.	16.00	150.00

Complete list of liners on request.
VERKADE'S NURSERIES Wayne, N. J.

Juniperus hetzi glauca	Each per 100
1-yr., 4 to 6 ins.	$0.10
2-yr., 6 to 9 ins.	.18
Lonicera zabeli	
12 to 18 ins.	.10
18 to 24 ins.	.15
Philadelphus virginalis	
12 to 18 ins.	.20
18 to 24 ins.	.30

BALCOM NURSERY Kokomo, Ind.

EVERGREEN PLANT MATERIAL.

ADVANCED LINERS in Azalea, Cornus, Cotoneaster, Ilex, Juniperus, Kalmia, Leucothoe, Pieris, Rhododendron, Taxus, Thuja, Tsuga, Viburnum.

Finished Trees in Colorado Blue Spruce.
All Certified for Western Shipment.
Write for Wholesale Price List.
H. W. WEBER EVERGREEN NURSERY
16 Summer St. Weston 93, Mass.

EVERGREEN SEEDLINGS.	Per 100	Per 1000
Jap. Red Pine, 2-0, 3 to 6 ins.	$3.00	$20.00
Multiflora Rose (thorny), 1-yr.	3.00	....
White Spruce, 2-0, 1 to 4 ins.	2.50	15.00
Black Hills Spruce, 3-0,		
6 to 8 ins.	5.00	35.00

Cash with order, please.
ARTHUR CASH NURSERY
Angola, N. Y.

NANDINA SEEDLINGS.
Ready to pot, $20.00 per 1000, postpaid.
DUNLAP NURSERIES Knoxville 16, Tenn.

The trade's market place—
The ads in the American Nurseryman.

FRUIT and NUT TREES

PEAR TREES.
10 trees or 50,000 trees.

Le Conte, Garber, Kieffer, Douglas, Baldwin, Orient, Pineapple, Bartlett, Biscamp, Lincoln and others.

	Each
2 to 3 ft.	$0.25
3 to 4 ft.	.35
4 to 5 ft.	.40
5 to 6 ft.	.45
6 to 7 ft.	.50
7 to 8 ft.	.55

Write us about any big order for orchard planting.

We have a few thousand P. calleryana seedlings to offer the trade this season in sizes from 16 to 24 ins., well calipered. Apparently the best understock for long-life pear trees. Ask for our list. Satisfied customers throughout the southwest are our best references.

WHITEROCK NURSERIES
Geo. M. Jeffus, Mgr.
Box N Crockett, Tex.

TOP-QUALITY TREES AT OUR
LOW PRICES MEAN BIG SAVINGS.

We have several hundred apple in surplus, 2-yr.-old, branched trees: Red Delicious, Transparent, Stayman, Improved Yellow Horse, Winesap, Yellow Delicious; 3 to 4 ft., 15c; 4 to 5 ft., 25c; 5 to 6 ft., 30c each.

A few thousand June Bud Peach, ideal for liners or retail trade. Elberta, Belle of Georgia, Dixigem, Red Haven, Dixired, Golden Jubilee. 6 to 12 ins., 6c; 12 to 18 ins., 8c; 18 to 24 ins., 10c; 2 to 3 ft., 12c each.

A few hundred Pear, 1-yr. whips. Kieffer only, 12 to 18 ins., 15c; 18 to 24 ins., 20c; 2 to 4 ft., 25c each. Also 2-yr. br. Pears, Orient only, 4 to 6 ft., 45c each.

Order in multiples of 25 or 100. Send cash with order, please. No charge for packing.

GLOBE NURSERIES
Box 249 McMinnville, Tenn.

LOOK!
SURPLUS 2-YR. APPLE.
Graded to A. A. N. Standards.

Now booking for Spring delivery at these attractive low prices:

	Each
9/16-in. cal., 4 to 5 ft.	$0.20
11/16-in. cal., 5 to 6 ft.	.25
⅞-in. cal. and up	.35

Will take limited contracts for growing peach, June buds or Dormant buds, for 1951 and 1952 deliveries. Write for price list on available stock.

PACK TRUE-TO-NAME NURSERY CO.
Phone 82-Y
McMinnville, Tenn.

GRAFTED CHINESE CHESTNUTS.

U. S. D. A.-approved varieties: Nanking, Meiling, Kuling, Abundance. 2 ft., 75c; 3 ft., $1.00; 4 ft., $1.25 (whips) each.

Seedling Chinese Chestnuts (branched), 1 ft., 25c; 2 ft., 35c; 3 ft., 60c; 4 ft., 80c each.

Thomas Black Walnuts, 6 ft., $1.00; 7 ft., $1.30; 8 ft., $1.50; 9 ft., $1.75 each.

Orders must be in lots of 10.
HIRSCHI'S NURSERY
Oklahoma City, Okla.

FRUITS, NUTS and FLOWERING TREES.

JUNE-BUDDED PEACH.

	Each
3 to 4 ft.	$0.30
2 to 3 ft.	.20
18 to 24 ins.	.15
12 to 18 ins.	.10

Varieties: Ambergem, Belle of Georgia, Champion, Dixigem, Dixired, Elberta, Gemmer's Late Elberta, Sullivan's Early Elberta, Golden Jubilee, Halehaven, Hiley Belle, Early Hiley, J. H. Hale, Indian Red, Mayflower, Redhaven, Red Bird, Shipper's Red.

TWO-YEAR APPLE.

	Each
11/16-in. and up, well br.	$0.35
9/16-in. and up, well br.	.30
7/16-in. and up, well br.	.25

Varieties: Anoka, Cortland, Yellow Delicious, Dark Red Delicious, Early Harvest, Grimes Golden, Hackworth, All-red Jonathan, Maiden Blush, Lodi, Red Northern Spy, Red Rome Beauty, Stayman Winesap, Turley Winesap, Yates, York Imperial and Transcendent Crab.

PLUM, DAMSON and PRUNE.

	Each
4 to 6 ft., well br.	$0.40
3 to 4 ft., well br.	.30
2 to 3 ft., well br.	.20
18 to 24 ins., part. br.	.15

Varieties: Abundance, Burbank, Bruce, Red June, Sapa Plum. Shropshire Damson. Stanley Prune.

APRICOT and NECTARINE.

	Each
4 to 6 ft., well br.	$0.55
3 to 4 ft., well br.	.45
2 to 3 ft., well br.	.30
18 to 24 ins., part. br.	.20

Varieties: Moorpark, Early Golden, Superb.

GRAFTED PECAN TREES.

	Each
5 to 6 ft.	$1.75
4 to 5 ft.	1.35
3 to 4 ft.	1.00
2 to 3 ft.	.90
18 to 24 ins.	.80

Varieties: Stuart, Success, Moneymaker.

FLOWERING CRAB.

	Each
5 to 6 ft., well br.	$0.65
4 to 5 ft., well br.	.45
4 to 5 ft., whips	.45
3 to 4 ft., whips	.35

Varieties: Eleyi, red; Hopa, rose; Floribunda.

FLOWERING PEACH.

	Each
4 to 5 ft., well br.	$0.45
3 to 4 ft., well br.	.35
2 to 3 ft., well br.	.25
18 to 24 ins., branched	.20

Varieties: Double Red and Double White.

WHITE-FLOWERING DOGWOOD.

	Each
4 to 5 ft., well br.	$0.90
3 to 4 ft., well br.	.65
2 to 3 ft., well br.	.40

PURPLELEAF PLUM.

	Each
2 to 3 ft.	$0.40
18 to 24 ins.	.30
12 to 18 ins.	.20

Varieties: Prunus cistena; Thundercloud.
Write for special quotations on quantity lots.
CUMBERLAND VALLEY NURSERIES, Inc.
McMinnville, Tenn.

ADVANCE NOTICE.

GRAFTED CHINESE CHESTNUT TREES

We have a fine lot of this year's grafted Chinese Chestnut trees, best varieties. Will be ready for retailers to take over fall, 1951.

SUNNY RIDGE NURSERY
Swarthmore, Pennsylvania

PECANS.

Stuart, Mahan, Success, Moneymaker, Moore, Burkett, Schley, Western Schley and other popular and profitable catalog items. Thomas Black and Willson Wonder English Walnuts, Eureka and Tanenashi Persimmons. Write for advanced trade list.

ARP NURSERY CO.
Box 867-C Tyler, Texas

Peach, Plum, Apricot, Fig, Persimmon, Pecan, in fact anything you might need.
Write for our price list.
FITZGERALD'S NURSERY
Stephenville, Texas

GRAPEVINES

Twenty of the best varieties of grapes. Lowest wholesale prices on CONCORD, NIAGARA, FREDONIA. List includes fine table varieties PORTLAND, CACO, SHERIDAN. Unusual kinds, such as GOLDEN MUSCAT and CONCORD SEEDLESS.

Write for prices along with complete list of berries.

CONGDON'S WHOLESALE NURSERY
North Collins, N. Y.

GRAPE CUTTINGS.

Concord and Fredonia, $4.00 per 1000. F.O.B. here. Tied with wire, 100 to bunch. Guaranteed true-to-name. Cut from our young, thrifty vineyard by experienced workmen.

IDEAL FRUIT FARM
Stilwell, Okla.

GROUND COVERS

PACHYSANDRA TERMINALIS.
Strong, 1-yr., field-grown, $65.00 per 1000.
HILLCREST GREENHOUSES, Franklin, Pa.

HARDWOOD CUTTINGS

HARDWOOD CUTTINGS.

From Hardy Northern-grown Shrubs and Trees. Delivery now. From our own plantings and blocks checked yearly for accuracy. Cut 7 inches.

	Per 1000
Aronia melanocarpa	$ 4.00
Cornus, paniculata	4.00
sibirica	4.00
lutea (yellow bark)	6.00
amomum	4.00
Forsythia intermedia	3.00
primulina	4.00
spectabilis	3.00
Elder, Golden	6.00
Cutleaf	4.00
Red-berried	5.00
canadensis	3.00
Hydrangea P.G.	5.00
Hydrangea A.G.	5.00
Privet, Amur	3.00
Regel (true)	3.00
Ibota	3.00
Honeysuckle, morrowi	3.00
bella albida	3.00
bella rosea	3.00
tat. rosea	4.00
korolkowi	4.00
zabeli	5.00
maacki	4.00
Diervilla trifida	4.00
Philadelphus grandiflorus	3.00
Mt. Blanc	3.00
Bouquet Blanc	3.00
coronarius	3.00
lemoinei	5.00
Physocarpus opul. aureus	3.00
Physocarpus opul. nanus	3.00
Sorbaria sorbifolia	3.00
Spiraea, billiardi	3.00
froebeli	3.00
thunbergi	3.00
vanhouttei	3.00
trichocarpa	3.00
Snowberry, White	3.00
Lilac, rothomagensis	5.00
Viburnum dentatum	4.00
Poplar, Lombardy	3.00
Willow, Niobe	3.00
Wisconsin	3.00
Golden	3.00
Pussy	3.00
Thuja pyramidalis	25.00
globosa	25.00
wareana	25.00

Packed free. Cash with order, please. Delivery in good order guaranteed.

THE SCOTCH GROVE NURSERY
Scotch Grove, Iowa

HARDY PLANTS

3 GREAT NEW
HARDY SUMMER-FLOWERING MUMS.
(Corliss Originations.)

GENERAL MARSHALL, Rich harmony of deep old rose, purple and gold.
GENERAL MACARTHUR, Glowing coppery-red.
GENERAL BRADLEY, Lovely apricot, seashell-pink and buff.
As STALWART and MERITORIOUS as the FAMOUS GENERALS themselves.

Large, double, frost-resistant blooms in August. Nice long stems for cutting; rich foliage. Extremely hardy, compact, bushy, vigorous plants, 2½ to 3 ft.

CLEAN, STRONG ROOTED CUTTINGS,
$30.00 per 100.
STRONG POT PLANTS,
$6.00 per doz.; $40.00 per 100.

Cuttings ready after March 1 (no orders less than 25 of a kind). Plants ready after April 1 (no orders less than 12 of a kind). 25 at 100 rate. No packing charge if cash with order.

Write for list of other hardy Mums.

CORLISS BROS., INC., NURSERIES
Gloucester, Mass.

HARDY CHRYSANTHEMUM CUTTINGS.

It is time to think of Hardy Chrysanthemum cuttings for spring delivery. A complete list of the best varieties is now available. Request a copy on your business stationery, please.

FRED C. GLOECKNER & CO., Inc.
15 East 26th St. New York 10, N. Y.

PINK SACHET.

Introducing a new Old-Fashion Pink. Large (2-inch) single, pink flowers with maroon center. Fragrant, hardy, with good foliage. Excellent for cutting. 10-inch stems.

	Doz.	100
Strong rooted cuttings	$4.00	$35.00

PLANE VIEW NURSERY, Newport, R. I.

PERENNIALS.
New and Standard Kinds.
A most modern and complete selection.
New Wholesale List now ready.
Send for your Free Copy Now.
CARROLL GARDENS
Box 15 Westminster, Md.

BLEEDING HEARTS.

	Per 100
Dicentra Spectabilis, 3 to 5	$25.00
Dicentra Spectabilis, 5 to 8 and up	35.00
Dicentra Eximia, 3 to 5	15.00
Dicentra Eximia, 5 to 8 and up	20.00

J. HENDRIKS, GROWER, PORTAGE, MICH.

America's Best Source
for Hardy Plants is
THE WAYSIDE GARDENS
Mentor, Ohio
Write for Trade List.

HARDY PLANTS.

Please write for our new list of perennial plants.

WALTERS GARDENS
Rt. 2 Zeeland, Mich.

See the October 1 issue of the American Nurseryman for list of Hardy Plants.

RICHARDS GARDENS
"Old Homestead Brand"
Box 30 Plainwell, Mich.

HARDY PHLOX.

Please ask for our new list on 1-year, field-grown Phlox.

WALTERS GARDENS
Rt. 2 Zeeland, Mich.

See the October 1 issue of the American Nurseryman for list of Delphiniums.

RICHARDS GARDENS
"Old Homestead Brand"
Box 30 Plainwell, Mich.

BLEEDING HEARTS.

	Each
Dicentra spectabilis, 3 to 5 eyes	$0.25
Dicentra spectabilis, 5 to 8 eyes	.35

Well developed, field-grown roots.

CASHAR W. EVANS Selbyville, Dela.

Pansies, perennials and rock plants in wide variety. Send for catalog.

PITZONKA'S PANSY FARM
Bristol, Pa.

If you don't find it listed here
Try a Wanted ad in the next issue
of the American Nurseryman.

HOLLY

ILEX DECIDUA.

Deciduous Holly bears masses of red berries that hang all winter. Hardy, transplants well, good retail seller. 1-yr. seedlings, 6 to 12 in., 15c ea.; 4 to 6 ins., 7½c ea. Older demonstration plant free with 300 No. 1 or 500 No. 2.

Red Yucca (Hesperaloe parviflora), blooms all summer. 1-yr. seedlings, 10c ea.

NOBLE NURSERY Noble, Okla.

AMERICAN HOLLY (Ilex Opaca).

Liners. Specimens to 16 ft.
Send for free booklet.

EARLE DILATUSH, Holly Specialist
Rt. 25 (near Trenton), Robbinsville, N. J.

IVIES

IVIES—Hardy English, both large and small-leaved; strong 2-in., $8.00 per 100, $75.00 per 1000; rooted cuttings, $2.50 per 100, $22.50 per 1000. Hahn's, 2-in., 8c. Baltica, 2-in., 10c.

JACOB SCHULZ
831 Cherokee Rd., Louisville 4, Ky.

ROSEBUSHES

ROSEBUSHES.

California-grown

Practically all No. 1 grade are sold and many varieties sold out completely. The remaining CALIFORNIA-GROWN Rosebushes will go to the first asking for them.

Condesa de Sastago
Duquesa de Penaranda
Girona
Hinrich Gaede
K. A. Viktoria
McGredy's Scarlet
Mrs. E. P. Thom
Poinsettia
Red Talisman
Golden Rapture
Red Radiance
Rose Marie
Soeur Therese
Talisman
Frau Karl Druschki
Caledonia
McGredy's Ivory
Christopher Stone
Etoile de Hollande
Hadley
J. O. Thilow
McGredy's Yellow
Mrs. P. S. du Pont
Pres. Hoover

CLIMBERS
Paul's Scarlet
Hadley
Snowbird
Mrs. E. P. Thom
Talisman
Red Talisman
Rose Marie
Belle of Portugal

No. 2 Grade	No. 1½ Grade	No. 1 Grade
36c each	47c each	58c each

F.O.B. Winnsboro, Tex.

Terms: 25 per cent with order, balance before shipment or C.O.D. These California-grown Rosebushes are scheduled to reach Winnsboro, Tex., around January 15, when they will be graded and shipment made when you are ready.

RUSSELL WILSON NURSERY
Winnsboro, Tex.

ROSES.

Pink Radiance, Red Radiance, Katharina Zeimet (white polyantha), Paul's Scarlet Cl., F. K. Druschki (also called White Am. Beauty and Snow Queen).

Prices: No. 1 Grade, 55c each.
No. 1½ Grade, 45c each.
Usual terms and conditions.

Immediate shipment. Cash, please.

OZARKS PLANT FARMS, Inc.
A.A.N. Mbr. Springfield, Mo.

WHY BE SATISFIED WITH LESS THAN THE BEST? CO-OPERATIVE ROSE GROWERS is composed of some fifty nurserymen who take great pride in producing the best in 2-yr. rosebushes. Co-Op rosebushes are dug and stored in cold-storage rooms, still another added expense, but assuring you, as always, the best quality roses at reasonable prices. Why run the risk of using roses that have been subjected to freezing temperatures?

Complete price list of bare-root and packaged roses available to licensed nurserymen, florists and dealers only. Write today.

CO-OPERATIVE ROSE GROWERS
Wholesale Exclusively
Phone 2-0122
P. O. Box 808 Tyler, Tex.

SEEDS

FRESH SEEDS. 1950 Crop.	Per lb.
Pinus palustris, Long-leaved Pine	$3.00
Pinus caribaea, Slash Pine	5.00
Cornus alba, White Dogwood	.75
Magnolia glauca, Sweet Bay	4.00
Ilex vomitoria, Yaupon Holly	.75
Ilex glabra, Smooth-leaved Holly	.75
Japanese Walnuts	.60

STOVALL NURSERY Leakesville, Miss.

NORTHERN EVERGREEN SEEDS.

Extracted at low temperature to preserve seed viability. Shipped now from our winter address. List sent.

K. J. BRADEN
936 E. Ashley Jacksonville, Fla.

SEEDS.

Nandina berries, new crop, not dried. $1.00 per lb. Cash with order, express collect.

ANDREWS' NURSERY
Box 442 Chapel Hill, N. C.

SHRUBS and TREES

LINING-OUT STOCK.

Strong, field-grown plants.

	Per 100	Per 1000
Honeysuckle, heckrotti, 12 to 18 ins.	$12.00	....
Euonymus coloratus, 10 to 12 ins.	12.00	$100.00
Euonymus radicans, 10 to 12 ins.	12.00	100.00
Euonymus carrierei, large-leaved type, 10 to 12 ins.	12.00	100.00
Lombardy Poplar (whips), 6 to 12 ins.	2.00	18.00
Lombardy Poplar (whips), 12 to 18 ins.	2.50	22.50
Lombardy Poplar (whips), 18 to 24 ins.	3.00	25.00
ROOTED CUTTINGS.		
Viburnum opulus sterile, Common Snowball	10.00	80.00
Euonymus coloratus	10.00	80.00
Spiraea froebeli	3.50	30.00
Spiraea Anthony Waterer	4.00	35.00

Cash, please. No packing charges.

PRITCHARD NURSERIES
R. 4 Ottawa, Kan.

LINERS, QUALITY PLANTS.

Spring or Fall Delivery.

	Each
Azalea, Mollis Cream, 2 to 4-in.	$0.08
Andromeda (Pieris), 4 to 6-in., C., X.	.20
Choisya ternata, 8 to 10 ins., XX	.35
Daphne mezereum, 6 to 8 ins., X	.12
Daphne mezereum, 8 to 10 ins., X	.17
Daphne mezereum, 10 to 12 ins., X	.22
Daphne odora, 6 to 8 ins., frame	.35
Daphne odora, 8 to 10 ins.	.45
Heather, mediterranea, 2 to 4-in. spread	.15
Heather, mediterranea alba, 2 to 4-in. spread	.15
Heather, Springwood White, 2 to 4-in. spread	.15
Heather, carnea, 2 to 4-in. spread	.15
Cypress, nestoides, X, fld.	.20
Thuja lobbi, 4 to 6 ins., X, fld.	.17
Thuja lobbi, 6 to 8 ins., X, fld.	.20
Thuja woodwardia, globe, 6 to 8 ins., X, fld.	.18
Skimmia japonica, X, fld., branched	.35

Cash with order, F.O.B. Shipped express.

FOUR STAR NURSERY
Rt. 3, Box 3529 Edmonds, Wash.

MIMOSA.

Albizzia Julibrissin.

Now booking orders for future delivery at rock-bottom prices for clean, well grown, healthy stock of this popular, most beautiful, small, pink-flowering tree. Easy to transplant. Grows quickly.

	Per 100	Per 1000
6 to 10 ins.	$ 2.50	$ 20.00
12 to 18 ins.	4.00	30.00
24 to 30 ins.	5.00	35.00
36 to 40 ins.	10.00	70.00
50 at 100 rate. 500 at 1000 rate.		
3 to 4-ft. transplants	17.00	100.00
4 to 5-ft. transplants	30.00	225.00
6 to 7-ft. transplants	65.00	....
7 to 8-ft. transplants	90.00	....

Not less than 10 at 100 rate.

RIEGEL PLANT CO.
Experiment, Ga.

MIMOSA (Albizzia Julibrissin).

	Per 100	Per 1000
2 to 3 ft.	$ 8.50	$ 80.00
3 to 4 ft.	15.00	110.00
4 to 5 ft.	17.50	150.00

No orders for less than 100 trees.

RUSSELL WILSON NURSERY
Winnsboro, Tex.

ORIENTAL MAGNOLIAS.

	Per 10	Per 100
M. soulangeana and M. alexandrina.		
12 to 18 ins., CT	$3.50	$30.00
18 to 24 ins., CT	4.00	35.00
3 to 4 ft., B&B	24.00	210.00
4 to 5 ft., B&B	32.00	280.00
5 to 6 ft., B&B	40.00	350.00
M. nigra,		
12 to 18 ins., CT	3.00	25.00
18 to 24 ins., CT	3.50	30.00
2 to 3 ft., B&B	16.00	150.00
3 to 4 ft., B&B	24.00	210.00

12 to 18 ins. CT and 18 to 24 ins. CT liners bare-rooted, packed in sphagnum moss, no packing charge. B&B stock loaded in your truck or boxcar.

OVERLOOK NURSERIES, Inc.
Mobile, Crichton Station, Ala.

Magnolia grandiflora seedlings, 1-yr., average about 5 ins., $65.00 per 1000, 300 at thousand rate. 2-yr. seedlings, 12 to 18 ins., 25c; 18 to 24 ins., 40c; 2 to 3 ft., 50c. Some magnolia leaves injured in top of plant because of record low temperatures in Nov. Euonymus patens, large leaf, vine type, 1-yr., rooted cuttings, about 6 ins., 10c. Euonymus patens, seedlings, 1-yr., 1 to 2 ft., 10c. Euonymus coloratus, 2-yr., cutting-grown, 1 to 2 ft., 15c. Pyracantha coccinea, 1-yr., rooted cuttings, 6 to 12 ins., 15c. Water Oak, almost evergreen here, 18 to 24 ins., 15c. Willow Oak, 12 to 18 ins., 10c. Another Oak (name in doubt), huge acorns, fast grower, nice tree, 2 to 3 ft., 20c. Cash before shipment, packing free. F.O.B. Van Buren, Ark. Shipment until about April 10. HARWELL NURSERY, Van Buren, Ark.

LINERS, SPRING DELIVERY.

	Each
Viburnum burkwoodi, 4 to 6 ins.	$0.12
Viburnum burkwoodi, 6 to 8 ins.	.17
Viburnum burkwoodi, 8 to 10 ins.	.21
Daphne cneorum	.12
Daphne odora	.15
Juniperus tamariscifolia, 2 to 4 ins.	.10
Juniperus tamariscifolia, 4 to 6 ins.	.15
Juniperus tamariscifolia, 6 to 8 ins.	.18
Lithospermum (Heavenly Blue)	.15

Terms: Half of amount with order, balance C.O.D.; packing at cost, shipped express.

FOUR STAR NURSERY
Rt. 3, Box 3529 Edmonds, Wash.

Ohio's oldest nursery offers you red and green Barberry. Grown right. Graded right.

Berberis thunbergi (Red-leaved Barberry).	Per 10	Per 100
12 to 15 ins., 3-yr., Tr.	$2.00	$17.50
18 to 24 ins., 3-yr., Tr.	3.50	30.00
24 to 30 ins., 3-yr., Tr.	4.00	35.00

Berberis thunbergi (Green-leaved Barberry).	Per 10	Per 100
12 to 18 ins., 3-yr., Tr.	$2.00	$15.00
18 to 24 ins., 3-yr., Tr.	3.00	25.00

Cash with order. Boxing free. Est. 1877

CALL'S NURSERIES
Call Road Perry, Ohio

SHADE TREES.

Thornless Honey Locust.

	Each per 10	Each per 100	Each per 1000
4 to 6 ft.	$0.45	$0.40	$0.35
6 to 8 ft.	.75	.70	.65
8 to 10 ft.	100	.90	.80
1 to 1½-in.	1.50	1.40	1.30
1½ to 2-in.	2.00	1.85	1.70
2 to 2½-in.	2.50	2.35	2.20
2½ to 3-in.	3.00	2.80	2.60

FARMER NURSERY
Plainview, Tex.

Ginkgo biloba, liners.	Per 100	Per 1000
2 to 4 ins.	$3.00	$25.00
4 to 6 ins.	4.00	35.00
6 to 8 ins.	5.00	45.00

Berberis thunbergi Atro. (Red-leaved Barberry), transplants. Inspection certificate No. 75.

12 to 15 ins.	13c each
15 to 18 ins.	18c each

Cash with order. Packing extra.

EDMOND L. BABCOCK NURSERY
32 West Ave. Dansville, N. Y.

RED JAP. MAPLE SEEDLINGS.

Selected 100 per cent red. (Sturdy.)

	Per 100	Per 1000
8 to 10 ins., X, 2-yr.	$25.00	....
6 to 8 ins., X, 2-yr.	22.50	$200.00
5 to 8 ins., X, 1-yr.	18.00	150.00

Spring delivery.

ELWOOD HUBBS
204 Delaware Ave. Palmyra, N. J.

LINING-OUT STOCK.

We offer Chinese Chestnuts; Native Shrubs, Trees and Evergreens; Flowering Peach and Ornamental Plums, and Fruit and Shade Trees. Top-quality, dependable plants at reasonable prices.

GLOBE NURSERIES
Box 249 McMinnville, Tenn.

DOGWOOD, PINK-FLOWERING.

	Per 10	Per 100
18 to 24 ins.	$15.00	$135.00
2 to 3 ft.	20.00	165.00

RUSSELL WILSON NURSERY
Winnsboro, Tex.

CHINESE ELM TREES.

4 to 6 ft., $20.00 per 100.
6 to 8 ft., $45.00 per 100; 25 at the 100 rate.
2 to 4-ft. liners, $5.00 per 100.

GRUNDY'S GARDENS
Box 325 Anton, Texas

SHRUBS AND TREES—Continued

	Per 1000
Chinese Arborvitae seedlings, strong, 5 to 10 ins.	$25.00
Cedar seedlings, bed-run	25.00
Cedar seedlings, graded, strong, 5 to 10 ins.	35.00
Chinese Elm, 3 to 5-in. cal.	

Write for special prices.

KLEIN NURSERY Enid, Okla.

	Per 100	Per 1000
1000 Irish Juniper	$50.00	$400.00
1000 Cydonia japonica	30.00	250.00
3000 Japanese Ligustrum, 3c and 6c each.		

Many other liners.

The CHALIN LEWIS NURSERY

P. O. Box 82 Piggott, Ark.

REDBUD (Cercis Canadensis).

	Per 100	Per 1000
2 to 3 ft.	$10.00	$ 80.00
3 to 4 ft.	15.00	130.00

No orders for less than 100 trees.

RUSSELL WILSON NURSERY

Winnsboro, Tex.

WEIGELA ROSEA.

	Per 100	Per 1000
18 to 24 ins.	$10.00	$ 90.00
2 to 3 ft.	15.00	140.00

No orders for less than 100 plants.

RUSSELL WILSON NURSERY

Winnsboro, Tex.

LOMBARDY POPLAR.

	Per 100	Per 1000
2 to 3 ft.	$6.00	$55.00
3 to 4 ft.	8.00	75.00

No orders for less than 100 trees.

RUSSELL WILSON NURSERY

Winnsboro, Tex.

VEGETABLE ROOTS

VICTORIA RHUBARB ROOTS.

1 to 1½-in., $35.00 per 1000; 1½-in. and up. $45.00 per 1000. Boxing free. Only a few thousand left.

ASHCRAFT PLANT NURSERY

Copemish, Mich.

MISCELLANEOUS

1000 Kentucky coffee trees. 50,000 Amur River North Privet, 7-in. cuttings, $2.50 per 1000. Many others. 1000 lbs. Kentucky coffee beans, 25c per lb.

Sycamore (Platanus), 45c per lb. Privet seeds, 90c per lb.

SCHROEDER NURSERY CO.

Granite City, Ill.

WOOD LABELS

DAHLIA OR TREE LABELS.

	Priced per 1000 plain	painted
3½x⅝ ins., notched, not wired	$2.50	$3.00
3½x⅝ ins., wired (copper)	3.30	4.10
POT LABELS.		
4x⅝ ins. (cartons 1000 each)	3.30	3.95
5x⅝ ins. (cartons 1000 each)	3.60	4.30
6x⅝ ins. (cartons 1000 each)	3.90	4.85
Priced per carton.		
8x⅝ ins. (cartons 500 each)	3.00	3.60
10x⅝ ins. (cartons 500 each)	3.50	4.25
GARDEN STAKES.		
Priced per carton.		
8x ⅞ ins. (cartons 250 each)	2.50	3.00
10x ⅞ ins. (cartons 250 each)	2.75	3.25
12x1⅛ ins. (cartons 100 each)	1.75	2.00

Our labels are perfectly white and smooth on both sides and are pronounced by growers the best and most economical.

YOHO & HOOKER, YOUNGSTOWN 2, O.

Turn Stock into Dollars
by Listing It in the Classified Ads
of the American Nurseryman.

SUPPLIES

Made from a good grade of Southern Yellow Pine, since Cypress is not available. Standard specifications, inside measurements.

KNOCK-DOWN FLATS.

16x12x2¾	$18.82 per 100
16x14x3¾	24.98 per 100
20x14x2¾	24.56 per 100
20x14x3¾	28.68 per 100
22⅝x15x2¾	28.14 per 100
22⅝x15x3¾	32.63 per 100

All other sizes quoted on request. Prices F.O.B. Birmingham.

We are manufacturers, not jobbers. Freight to any point is a small item per Flat. Our Flats are the best. Why pay more? Our quality guaranteed. Prompt shipment, any quantity. Attach check to order.

We make mixed shipments of flats, plant boxes and spray boards.

HIGHTOWER BOX & TANK CO.

Birmingham, Ala.

WISCONSIN'S QUALITY SPHAGNUM MOSS.

Clean, long-fibered, solidly packed in burlapped or wired bales of standard size, direct from drying beds. None better.

Trucked when feasible.

WARRENS MOSS CO., Box 7, Warren, Wis.

PRINTING—Letterheads, Billheads, Statements, Cards, Envelopes, Tags, Blotters, Folders. Samples sent.

J. GARLAND HILL, Dept. A, Seaford, Del.

Now is the time to build new low-cost shade houses, or to replace your old worn-out lath or slat houses with Brand-new Low-cost Heavy Steel Wire Netting. This material is made of 16-gauge steel wire 2x6-in. mesh, garnished with steel wool and coated with high-grade enamel. Each roll is 75 ft. long by 6 ft. wide, containing 450 sq. ft. Inexpensive and easy-to-construct lath houses built with this netting provide uniform shade ideal for Azaleas, Camellias and for all other plants. Available for immediate shipment. Write for descriptive folder and prices to cover any quantity you may need from one roll to carlot shipments.

H. M. OWEN	E. A. FARLEY
P. O. Box 946	3333 Gentilly Blvd.
Columbus, Miss.	New Orleans, La.

MICHIGAN PEAT.

HIGH NITROGEN, BACTI-VATED quality Peat at a low price. 5 sizes of bags for resale. Huge 100-lb. burlap bag contains 4 to 5 bu. concentrated peat — ONLY $1.65 bag F.O.B. Minimum order 2 bags. Order genuine M. P. only from

MICHIGAN PEAT, Inc.

Capac 62 Capac, Mich.

BARGAIN CYPRESS FLATS, K.D.

Made from No. 2 grade Red Cypress. Has some defects but guaranteed all usable pieces. Orders must be in units of 100-200 and up.

Size 20x15x3 ins. inside, $31.50 per 100. We ship same day, subject to present stock.

Attach check to order, please.

YOHO & HOOKER, Youngstown 2, Ohio

MINNESOTA WHITE CEDAR FLATS.

12x16x2¾	$18.25 per 100
14x20x2¾	22.00 per 100
14x20x3¾	25.00 per 100

Other sizes quoted on request. Also crating and other lumber. Aspen and Pine. F.O.B. Cook, Minn. Please attach check.

H. C. HILL & SONS, Cook, Minn.

PAY LESS FOR WOOD LABELS. High quality, fully guaranteed. Write for prices and samples. ANTHONY & CO., Escanaba, Mich.

The trade's market place—
The ads in the American Nurseryman.

WANTED

WANTED UNDERSTOCK FOR GRAFTING.

Please send sample.

Fagus sylvatica, Viburnum lantana, Hamamelis virginiana, Acer palmatum, Juniperus virginiana, Cryptomeria japonica, Magnolia kobus or acuminata, Sorbus, Fraxinus ornus, Hibiscus syriacus, Staphylia pinnata.

KLUIS' NURSERIES

Pompton Plains, N. J.

WANTED.

Lining-out stock of Shrubs, Evergreens and Perennials. Can use a few developed plants to be used in our show grounds.

Spring delivery.

SUNSET HILL GARDENS

P. O. Box 64 New London, Conn.

WANTED—20,000 Ampelopsis veitchi, 1-yr. sdlgs.; 20,000 Red Barberry, 1 or 2-yr. sdlgs.; 20,000 Green Barberry, 1 or 2-yr. sdlgs. Quote best price. FRANK TOREKI & SON NURSERY, Painesville, O.

WANTED.

10,000 Red Elm (Ulmus fulva) seedlings.

OHIO RECLAMATION ASSOCIATION

Box 68 Cadiz, Ohio

TRADE BOOKS

TRADE BOOKS.

CULTIVATED CONIFERS,
by L. H. Bailey, $10.00.

CLIMBERS AND GROUND COVERS,
by A. C. Hottes, $3.00.

NURSERY MANUAL,
by L. H. Bailey, $5.00.

PROPAGATION OF PLANTS,
by M. G. Kains and L. M. McQuesten, $4.00.

TREE EXPERTS' MANUAL,
by Richard R. Fenska, $5.00.

IMPROVED PRACTICES IN PROPAGATION BY SEED,
by L. C. Chadwick, 25c.

MAINTENANCE OF SHADE AND ORNAMENTAL TREES AND SHRUBS,
by P. P. Pirone, $6.50.

PLANTING DESIGN,
by Florence B. Robinson, $3.00.

GREENHOUSES: THEIR CONSTRUCTION AND EQUIPMENT,
by W. J. Wright, $2.50.

HEATING GREENHOUSES,
by L. R. Taft, 50c.

These books and others on horticultural subjects may be obtained, postpaid, at the publishers' prices indicated, from

AMERICAN NURSERYMAN
343 South Dearborn Chicago 4, Ill.

NO-DRI PROTECTIVE WAX EMULSION

Spray, paint or dip transplanted trees and shrubs to reduce loss of moisture and winter wind burn.

55-gal. drum	$63.25	5-gal. drum	$7.00
30-gal. drum	36.00	1-gal. can	3.00

RABBIT REPELLENT

Protect young nursery stock. Nonpoisonous. Applied by spraying or painting.

55-gal. drum	$74.25	5-gal. drum	$10.00
30-gal. drum	54.00	1-gal. can	3.00

BORER REPELLENT

Dogwood and many other ornamental trees should be protected from borer damage. Nonpoisonous. Simply brush it on as directed.

		5-gal. drum	$11.50
30-gal. drum	$63.00	1-gal. can	3.00

C. P. O. INSECTICIDE SOAP SPREADER

Used extensively for twenty years to control scale insects, red spiders, lace bugs, aphis on ornamental nursery stock. Safe for summer use.

55-gal. drum	$77.00	5-gal. drum	$9.25
30-gal. drum	45.00	1-gal. can	3.25

All prices F.O.B. Philadelphia, Pa.

CRYSTAL SOAP & CHEM. CO., Inc.

6300 State Road, Philadelphia 35, Pa., Dept. AN.

AN EXTRA SALESMAN

How would you like to put on an extra salesman during conventions and busy selling seasons, without the task of searching for a man qualified for the job or the expense of maintaining him on the payroll at other times?

You can do it by using the advertising columns of the American Nurseryman to carry your offers of stock.

Try it—now!

Advertising rates on request.

AMERICAN NURSERYMAN

343 S. Dearborn St. Chicago 4, Ill.

CHARLES SIZEMORE
Traffic Manager

319½ Georgia St., Louisiana, Mo.

Loss and damage claims against railroad and express companies collected.

Freight bills audited.

Past due notes and accounts collected.

Well known to the nurserymen of the country.

Reference: Bank of Louisiana.

BALED SHINGLE TOW

(CEDAR SHAVINGS)

WM. A. JOHNSTON

1722 N. W. 15th St. Portland 9, Ore.

Learn ORNAMENTAL HORTICULTURE

A thorough, constructive home training for employment or advancement in Nursery Operations, Park Supervision or Maintenance, Landscape Designing or Landscape Gardening. Send for Free bulletin. APPROVED FOR VETERANS.

NATIONAL LANDSCAPE INSTITUTE

Dept. N-1, 310 So. Robertson, Los Angeles 48, Calif.

BUSINESS LONGEVITY.

The records of credit organizations have, from time to time, called attention to the appalling mortality in small business establishments, particularly retail shops. The percentage of those that last even a few years is so small that it has given rise to bulletins of advice issued by departments of the federal government, by state institutions and by research organizations, as well as to numerous articles on business management in trade periodicals.

But it might be assumed that when a manufacturing organization has attained some size, it usually enjoys a long lease on life. This impression has been removed by data on the ages of all corporations in the United States, never before available until published recently by the United States Treasury Department. These are included as a special tabulation in the final report on statistics of income for 1945 and are condensed in the following table of ages of all manufacturing corporations in the United States as of December 31, 1945:

Date Incorporated	Total Number	Per Cent of Total
1940-45	19,877	25.7
1930-39	23,357	30.2
1920-29	16,144	20.9
1910-19	8,636	11.2
1900-09	6,056	7.8
Before 1900	3,256	4.2
Total	77,326	100.0

From the foregoing figures it will be seen that, out of some 77,000 active manufacturing corporations reporting at the end of the year 1945, over half were less than 16 years old. About forty per cent were from 16 to 45 years old, and only four per cent approached or exceeded the half-century mark.

Although dates of incorporation do not, in all cases, measure the total age of a business, the Treasury Department found that about three-fourths of all companies incorporated in 1945 represented businesses established in that year, the remainder being successors to other corporations, to partnerships or to individual proprietorships.

Any number of lessons can be drawn from such figures, but it is obvious to everyone that even a large corporation is not assured of permanence and prosperity. Management must be alert and up to date. New personnel must be trained to take the place of executives who are passing. Ideas and methods must be adopted to keep pace with the changes in the times. The heavy tax load makes these steps more necessary than before.

At the same time, it is demonstrated that new success stories in business are still being written, that small businesses can grow into big ones and that opportunities are open for those who will take advantage of them.

WANT ADS

Help and Situation Wanted and For Sale advertisements.

Display: $3.00 per inch, each insertion. **Liners: 25c** line; minimum order **$2.00**

SITUATION WANTED

Engish nurseryman, age 40, life experience as commercial horticulturist, seeks position with American nursery. Propagating, landscape layout, arboriculture, glasshouse crops, horticultural machinery, labor supervision, floral work. Has references, passport and visa. Address Box 773, care of American Nurseryman.

SITUATION WANTED

Graduate in ornamental horticulture of Michigan State College, age 26, married, one child, desires position with well established midwestern landscape nursery. Address Box 772, care of American Nurseryman.

HELP WANTED

Landscape foreman for housing project and nursery operations. Unusual opening for aggressive man. Opportunity for part interest to right party. Permanent. Near Baltimore, Md. State age, experience, etc. Address Box 752, care of American Nurseryman.

HELP WANTED

Experienced cellar foreman for large midwestern nursery. Knowledge of all phases of nursery operations desirable.
Address Box 768,
care of American Nurseryman.

FOR SALE

Northern Nut Tree Nursery.

Chance for man with some capital to step into a going enterprise. 7000 customers, 20,000 on mailing list. Good supply of stocks and grafted trees. Write for particulars. Address Box 763, care of American Nurseryman.

Help Wanted—Opportunities available for experienced nurserymen. Write full particulars to MONROVIA NURSERY CO., P. O. Box 196, Monrovia, Calif.

Mention The American Nurseryman when you write.

FOR SALE

Nursery of 2½ acres, located on U. S. Highway 62, about 60 miles southeast of Cleveland, O., and near steel city of nearly 200,000 population, on edge of fast-growing village. Well established business of 15 years. Good clientele and plenty of work in an uncrowded field. A money-maker. Nursery well stocked with evergreens for foundation and landscape work, broad-leaved evergreens and liners. Modern house, 6 rooms and bath; gas furnace; double garage with overhead storage; coldframes. Priced with or without equipment, preferrably equipped. One lot between residence and nursery. Poor health reason for selling. Address Box 771, care of American Nurseryman.

FOR SALE

Twelve-acre nursery in midwest rich land, wholesale inventory value growing stock $7500.00, seventy per cent of which is evergreens, coniferous and broad-leaved, balance is shade trees, flowering shrubs and ornamentals. On U. S. highway; new modern 5-room brick house; concrete block storage house, 25x50 ft.; tractor, truck, sprayer and other equipment like new. Reason for selling, poor health, and my son, who was operating the business, was taken into the service. Address Box 770, care of American Nurseryman.

FOR SALE

Will sell half or whole interest in going Louisiana nursery. 12 acres choice land under fence, 2 modern homes in perfect condition, packing house, storage room, propagating house, numerous hotbeds, 1949 International Harvester tractor with implements, 1,500 feet galvanized pipe bringing water from deep flowing well to fields. Owner connected with large Georgia retail outlet and cannot devote full time to this business. Excellent opportunity for good grower. Write for full particulars. ARNBER FLOWERFARM, Slidell, La.

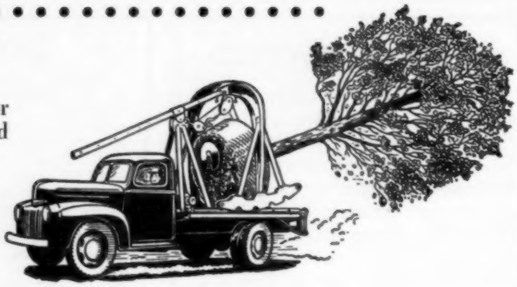
FOR SALE—$10,000.00, total price, actual wholesale inventory. Grossed $35,000.00 in 1949. 1⅓-acre growing ground; 8-room modern house; large, roofed lath house and storage building; total rent, $60.00 a month; located in fastest-growing city in the U. S. Ralph Hunn, Nurseryman, 1031 Sunset Rd., Albuquerque, N. M.

ANOTHER addition to the Adkins-Phelps Seed Co., Little Rock, Ark., is a new retail store opened recently at North Little Rock. The company also has added nursery stock to both its Little Rock and North Little Rock stores.

PREVIOUSLY located at 1070 Butler drive south, Midway Park, N. C., New River Nursery, operated by J. S. Melton, now is located on Route E, Hubert, N. C.

HAROLD GLISSMAN, while continuing as superintendent of grounds at Boystown, Neb., will in the future also do landscape, turf construction and maintenance consulting work in the midwest. He has purchased forty acres of land for a 9-hole golf course and a trailer park, which will be managed by his father.

BIG TREE MOVER



✓ Handles up to 12-inch trees.
✓ "Rocks back" for easy loading and unloading.
✓ "Rocks forward" for balanced load on truck.
✓ Two sizes . . . custom fitted to your truck.
✓ Fits any standard truck chassis.
✓ Superstructure removable for other truck use.
✓ Proved in use for years by nurseries and park departments all over U. S.
✓ Saves time and labor on the big, profitable jobs.

Write for detailed specifications and prices

SOLD ON TERMS IF DESIRED

Williams & Harvey Nurseries
P. O. Box 7068, Country Club Station KANSAS CITY 2, MO.

"BRODLEAF" *Imported* **HOLLAND PEAT MOSS**

★ EXCELLENT QUALITY
★ HORTICULTURAL
★ STURDY BALES

Carlot Inquiries Invited . . .

BRODLEAF
HOLLAND
PEAT MOSS

HALF MOON MFG. & TRADING CO., INC.
90 WEST STREET — NEW YORK 6, N. Y. Telephone BArclay 7-8357

**GRAFT WAX
KANDLES
CAULK WAX**

A pure adhesive, noncracking wax compounded with effective anti-mold agent. 2 Kandle tubes; weight 2 lbs., **$1.00** postpaid.

KALAMAZOO PARAFFINE CO.
KALAMAZOO, MICH.

THE SUPERIOR SOIL SHREDDER

• DEPENDABLE
• RUGGED
• ECONOMICAL

Write:
THE SNYDER MANUFACTURING CO.
Box 15 MEADVILLE, PA.

BURLAST
BALL SAVER
ENDS RE-BURLAPPING
HILL'S NURSERY
P. O. Box 43 VICTORIA, TEXAS

ZIP-STAY LABELS
Nurserymen's favorite for forty-five years. Please write for prices and samples.
OHIO NURSERY LABEL CO.
P. O. Box 677 Elyria, Ohio

CAN COLLEGES TRAIN NURSERYMEN?

[Continued from page 18.]

with? I have often wondered how practical artistic people are, and I have often observed that the aesthetic type seldom appreciates the necessity for being practical. The happy landscape operation usually embodies the two functions in two individuals who can work together and respect each other's problems. Once in a while an apprentice contributes to the efficiency of the operation. He is observant, and he will develop into foreman material provided that he is willing to serve his apprenticeship. There is something about a college graduate, however, that lacks the humility necessary for him to do the menial operations which teach him the best part of the library on plant materials and their use.

I had one young man quit after fifteen months with our firm, saying that if he stayed with us he would always be using a shovel and a hoe. I could have reminded him that God intended man to use both his hands and his head, but it would have been lost on him. He was the sort who puts water in the middle cell of the truck battery and says he can't imagine why the motor won't turn over, or he labels all the drawers of the small tool cabinet "miscellaneous."

Rather than give the impression that I am ruling the college-trained nurseryman out of the ideal nursery management picture, let me say that I have hired over fifty college students studying agriculture or horticulture, and I have found them able to grasp the objectives of our operations much more readily than any other persons whom we might expect to hire. But for these students to aspire to a diploma which means anything to the employer, we must work for a change in curriculums.

It may be that landscape architecture should be a graduate study following a 4-year course which includes more about characteristics of plant materials and the mechanics of handling them. Nursery problems studies are a must. Through apprenticeship the student may learn rooting habits and transplantability of commercial varieties. He now can find in college curriculums a good background in propagation, spraying, entomology, pruning, soils and the like. But only experience or a short course drawing on faculty with field experience is likely to teach a would-be landscape man how to draw up plans with maintenance in mind. So the customer is not served well in a very fundamental respect.

Most students are, at best, trying to discover whether they are in the right field, and they can hope to arrive at this important analysis of themselves as they are exposed to elements of curriculums. It is the duty of the college to weed out the color-blind landscape student. And it is the obligation of schools teaching nursery management to train men capable of assuming foremen's jobs, because a college graduate should command the salary of a foreman if his training means anything.

How can agricultural colleges hope to fulfill this obligation? Let us be realistic. There is not enough demand for foremen in any one state to justify the specialized courses required in their curriculums to produce well trained personnel. It is a regional problem. In agricultural regions there are faculties which could staff a short course to be offered at one college in the region chosen as the instrument for this specialized teaching. During midsummer or midwinter, universities could cooperate under the sponsorship of a single institution to supplement the blanks in curriculum of the individual colleges.

This, I think, is the hope for securing training as applied to the nursery industry. A supplemental short course has the potential of making a practical specialist out of a student attending a school where the curriculum is generally agricultural, horticultural, floricultural or in some allied field related to commercial growing.

X-RAY FLOWER PICTURES.

X-ray technicians at the Good Samaritan hospital, Cincinnati, O., have developed their hobbyof X-raying flowers into a business. Doctors, patients and visitors showed such interest in the painted X-ray studies of flowers used to decorate the hospital's X-ray department, that as a result more than 500 studies have been marketed and distributed to persons in the United States, South America and Europe. The new form of art, started there eight years ago, is called Flor de Rey, meaning flowers of ray, and the process is patented.

Fresh-cut flowers are filmed by an old model, open tube X-ray machine, which provides the low voltage necessary to film the delicate flowers. The first images obtained lacked contrast and sharp outlines, but the experimenters have now developed their technique until dark backgrounds are provided. Structural de-

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tails brought out in the resulting pictures make it seem probable that the X-raying of flowers would be useful for botanical study, and the staff members hope to compile a picture manual for educational use.

Pictures are made in three sizes, 8x10, 11x14 and 14x17 inches, and prices range from $5 to $25 for unframed ones and from $10 to $50 for framed ones. The three sizes are available in black and white or tinted in the flowers' natural colors.

LONDON ROOF GARDEN.

In November 3,000 tulip and daffodil bulbs and 500 wallflower plants were planted on the roof garden of Adelaide House, 140 feet high, situated near London bridge, according to the Gardeners' Chronicle, London, England.

Many climbing roses will be replaced, and two lawns have recently been added to this picturesque garden. The little-known 18-hole putting course on this unique roof is in an excellent state of preservation. During the war, J. Martin, known as "London's highest gardener," grew lettuces, cabbages and root crops for the Adelaide House restaurant in this garden.

A good display of flowers is being planned for next year to show to foreign visitors during the Festival of Britain. The spire of St. Magnus the Martyr church, a few yards away, is just a little higher than the lawns and flower beds of this remarkable garden.

PUBLICITY director for the California spring garden show to be held April 24 to May 4 is Mrs. Janice Anderson McIver.

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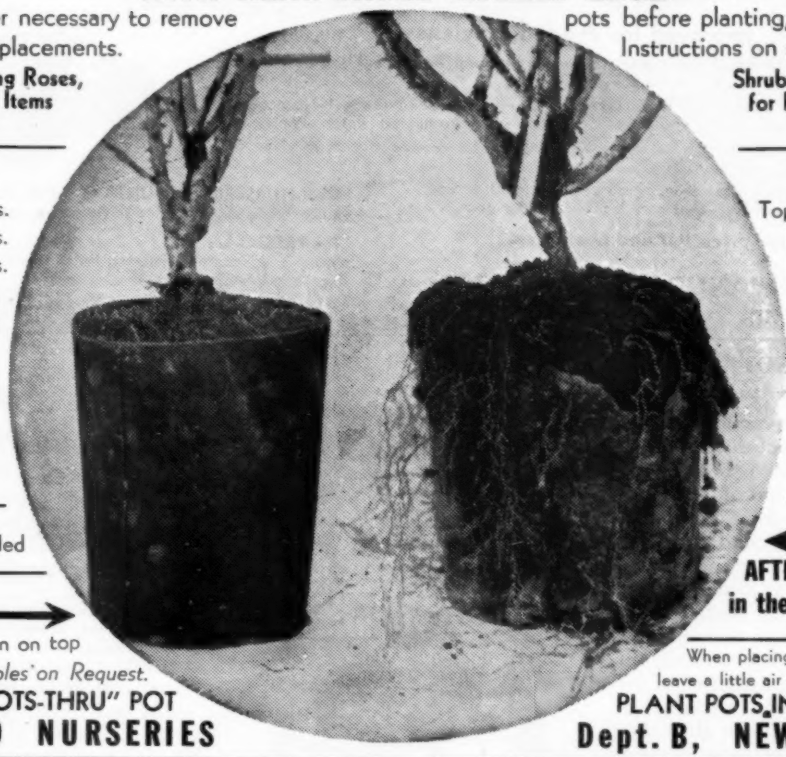

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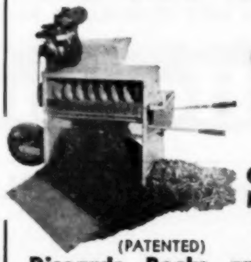
COLDFRAME GRAFTING.

[Concluded from page 12.]

a fair amount of fibrous side roots attached. The percentage of take, however, will usually not be so high on these root grafts.

Berckmans golden biota can be grafted in coldframes quite successfully, the best time being early March. The understock is not removed in this case. The scion is attached with a veneer graft, waxed and planted into the coldframe. Only after the two have joined together and the scion is in active growth should the understock be removed.

As the propagator becomes more interested and more proficient in the use of frames, he will undoubtedly wish to try his hand at heating the frame with electrically heated cables. This is quite satisfactory, and, if a soil temperature of 65 to 70 degrees is maintained, then the percentage of take will be much higher. One thing to watch, however, in using this equipment, is the moisture content of the medium in the frame, because evaporation will be much more rapid with these higher temperatures. It is vital to obtain only the best equipment, because an unstable thermostat can quickly ruin a valuable and promising batch of plants.



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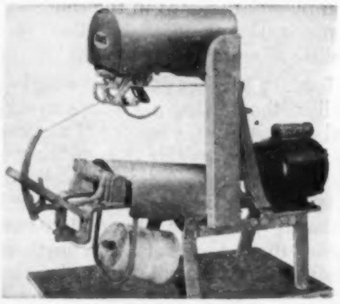

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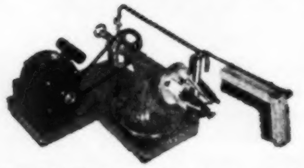

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PLANT NOTES.

[Continued from page 22.]

(hence the common name powdered thalia), made a picture not easily forgotten. It is said to bloom from June to September, but of that I cannot say; if true, so long a blooming period would add much to the plant's usefulness. The flowering period ends, it is said, in an equally pretty fruiting season, with nutlike fruits about one-half inch in diameter. Although T. dealbata is practically unknown in American gardens and evidently not known at all to American nurserymen, I often see this plant listed by English growers. Judging from my brief acquaintance with it and by what friends in the south say about it, the plant has excellent possibilities for exploitation.

I am told that T. dealbata does well in the garden if given a mucky soil that is always wet or if planted in shallow water. There is nothing in the literature to tell us how hardy it is. Park, a Texas botanist, says it is hardy to Austin, Tex. That may mean that Austin is the northern limit of its natural range in that state. It grows naturally in South Carolina, and I have seen it in one Virginia garden, where it had been planted two feet deep. It is easily multiplied by division.

Acorus Calamus.

The calamus, Acorus calamus, of old-time herbalists, has an extensive literature, especially as to its distribution and uses, which would be interesting to some American Nurseryman readers, as it has been to me during the years that I have been collecting it, but it is probably best to confine ourselves to its garden uses. The type has, because of the inconspicuous flowers of the genus and its rather uninteresting foliage, little of special value for the ornamental garden. Its variety variegatus, with its long narrow leaves, striped yellow,

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bright in the early part of the year and fading to almost cream as summer wanes, is, however, one of the better plants for damp places. It is so accommodating indeed that it does not need a merely moist spot, but will grow in shallow water or even in the border if the soil is not too dry. It is a splendid plant, I think, for the damp spot, because it is colorful for so long a period.

Thalictrum Minus.

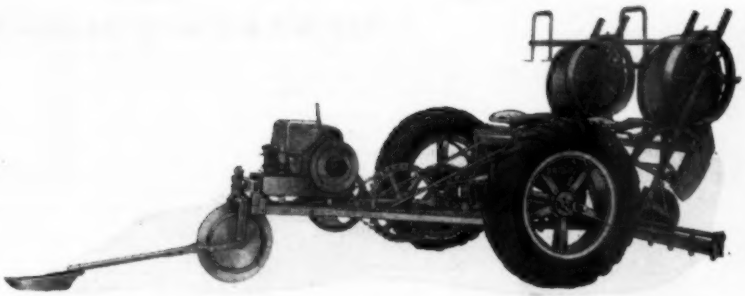
In answer to the West Virginia reader who asked about the hardiness of Thalictrum minus: There seems to be a big difference in the hardiness of material within the species. That is to be expected, though, because it ranges from northern Africa through Europe into Asia. If you obtain your seeds or plants from its northern fringes, it should be entirely hardy, not only in West Virginia, but also in most other parts of the country.

To the Oklahoma reader who asked for an appraisal of the plant, let me say: It is, in my opinion, a most valuable landscape plant, especially when a plant approximately one foot high, with exquisitely lovely, ferny foliage is called for. As a landscape plant, it is useful in a myriad of situations, as in bold masses in the bays of shrub borders, or as a covering for unsightly banks that are not bone-dry. Its value is further increased by the fact that it is equally at home in full sun or in shady places.

Unfortunately, the greenish-yellow flowers in June are of little account as ornaments, but that is of far less consequence than it would be if the plant were not so well blessed with beautiful foliage. Grow it from seeds, preferably planted outdoors in fall or winter.

Iberis Taurica.

There is a candytuft, sparingly present in American gardens, known as Iberis taurica (Hortus does not mention it at all), that would no doubt be welcomed by gardeners if it were presented to them. Its growth habits are on the order of I. sempervirens, and it possesses about the same degree of hardiness, which means that it would be useful in all except the coldest parts of the country. Instead of the ordinary hardy candytuft, its flower color is decidedly pink, quite like the tender I. gibraltarica. Although fully hardy here, and able to withstand temperatures as low as 20 degrees below zero, and coming unscathed through winters that severely damaged some candy-



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tuft foliage, it is apparently not a long-lived plant and may be little more than a biennial under ordinary garden conditions.

Native Plants.

One of the biggest opportunities for American nurserymen and gardeners is the testing and appraising of our native flora. Superficial thought might lead to the conclusion that most native plants have been through the experimenter's hands. But, if they have been, the records do not reveal the facts, and, for all practical purposes, many still remain unknown. The truth of the foregoing statements is apparent.

If you doubt their accuracy, try to find any allusions in popular garden literature to Selenia aurea, a small, crucifer from the southwestern states. Or try to obtain seeds of it through any commercial channels. And then go through the same process with Physaria didymocarpa, another crucifer from the western plains and foothills of the Rocky mountains, as the object of search. Take the case of an eastern plant as another example. How many gardeners, even in its natural range, have seen Kalmia cuneata? A tiny fleabane, Erigeron poliospermus, from the high places in the west, is enthusiastically praised in European literature. How many times have you seen it in American gardens? Such examples could be continued indefinitely, though that would serve no good purpose. No matter where you live in America, there are plants that need testing under garden conditions.

Lily Turf.

The lily turf, Liriope graminifolia, is a plant of many uses. This far north we have to use it as a house plant unless we want to take the chance of losing it some cold winter. The plant has tufts of grasslike

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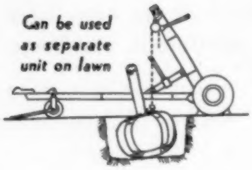
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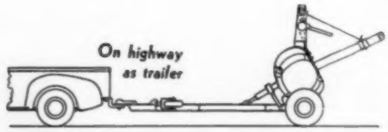

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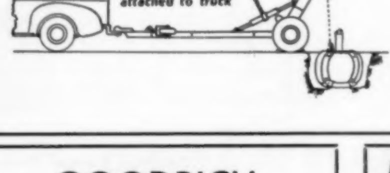
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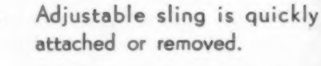

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leaves and bears foot-high or higher spikes of whitish to purplish stars in late summer, which in turn are followed by decorative purple berries. In the south it is sometimes used as a substitute for grass in shady places where lack of sunshine makes it difficult to maintain any grass. It has still another role that I should like to stress at this time.

Miss Jekyll, in Wood and Garden, spoke highly of it as a source of foliage for flower arrangements, when she wrote: "I grow it in rather large quantity for winter cutting, the leaves being at their best in the winter months. They are sword-shaped and of a lovely green color, and are arranged in flat sheaves after the manner of a flag iris. I pull up a whole plant at a time . . . and wash it and cut away the group of leaves just at the root, so they are held together by the rootstock."

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DEVELOPING DISEASE RESISTANCE IN TREES.

[Continued from page 9.]

closely related trees should be made wherever else they may be growing. If they are brought in from a distance, then suitable precautions are necessary that they carry no injurious insects or plant diseases. If local or distant trees should prove to be superior and if they could be propagated vegetatively, much progress might be made in a short time. With trees that must be reproduced from seeds, the establishment of seed orchards seems quite important. In any case, the elite trees, wherever secured, should be preserved against loss in suitable arboretums, strategically located.

3. Further improvement may be sought by cross-pollinating trees with the best characteristics and by giving thorough tests to the progeny. By this procedure, if trees act like other plants, it should be possible in time to combine the best characteristics and to eliminate the worst ones. Frequently in such situations some of the progeny may show unusual growth which is better than that of either parent. This is called hybrid vigor. Other means for inducing variations, such as treatments with colchicine, are available. The progeny testing is a continuing and necessary process because the seedlings from cross-pollination doubtless will show considerable variability. Only from the progeny can one determine the genetic constitution and the general ability to combine with related trees.

The utilization of these procedures gives promise of enabling the tree breeder, within reasonable limits, to make trees to order in the same way that corn, wheat and cabbage have been developed.

More detailed considerations have been covered recently in the United States Department of Agriculture

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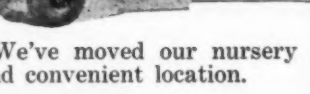

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Yearbook for 1949 and elsewhere. Tree breeding is being done in several places. In Wisconsin my colleagues, Professor Brink and Mr. Hitt, are now active particularly with red and jack pine.

With this sketchy background, let us consider a few examples of some work done in developing trees resistant to this or that disease. In all cases the men doing such work have recognized that disease resistance is only one of the characteristics necessary for an elite tree. Fortunately, the work on tree diseases in the United States Department of Agriculture is directed by Dr. Lee Hutchins, who does much to encourage work along these lines.

Some Examples of Selected Trees.

Some years ago a selection of red cedar resistant to the cedar-apple rust was made by the late Anthony Berg, at West Virginia University. We have tested Berg's selection and have made several others from native trees in Wisconsin. We now have four selections that have shown a high degree of resistance to this disease. These trees have no particular distinctive characteristics from the common red cedar except for this resistance. One or two of the selections seem to hold the green color a little longer in the fall. Thus far they have been propagated by grafting.

Two serious diseases occur on elm trees, Dutch elm disease and phloem necrosis. Since both diseases are severe in Ohio and some neighboring states, the complexity of the problem is enormously increased. Thanks to Roger U. Swingle, of the United States Department of Agriculture at Columbus, O., and his associates, much progress has been made. Dr. Swingle has some elm trees that are resistant to Dutch elm disease and some others that are resistant to phloem necrosis. Now he is searching for trees with excellent characteristics, including resistance to both of these diseases. This is much more difficult with two diseases than with one. However, some of his selections look really promising.

The lovely ornamental mimosa trees used extensively in the southeast have been attacked in recent years by a fusarium wilt. This has been devastating in some locations. Dr. G. H. Hepting and his associates, of the United States Department of Agriculture, at Asheville, N. C., have made some selections which hold considerable promise for resistance. The trees selected were survivors of both natural and arti-

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ficial epidemics. They have been severely tested in soil where the causal fungus was abundant. The best selections have been propagated by cuttings.

As almost everyone knows, the American chestnuts were attacked some years ago by chestnut blight. They have been wiped out except for occasional trees on the fringes of the natural range that have escaped infection. The late Dr. Beattie collected seeds from a number of selections in the Far East and brought them to this country for breeding work. This has been carried forward by Dr. A. H. Graves, at New Haven, Conn., and particularly by Dr. G. F. Gravatt, of the United States Department of Agriculture, at Beltsville, Md. Already resistant chestnut trees are growing well. This may place the nuts back on the American market. However, the development of the forest type of tree, which has satisfactory resistance, seems to be more difficult, although not hopeless.

Work in Wisconsin.

Some years ago, in association with T. F. Kouba, of the United States Department of Agriculture, and W. H. Brener, of the Wisconsin conservation department, we made selections of over 150 trees which had withstood for fifteen years exposure to the white-pine blister-rust fungus. Wind-pollinated seeds were collected from these trees and grafts were made. These were planted with replications in a nursery near Wisconsin Rapids with an interplanting of ribes bushes. Half of the trees were given further and severe artificial inoculation. About three dozen of the original selections have shown a high degree of resistance. Unfortunately, only a few of the open-pollinated seedlings from these same trees carried resistance. For the present, the best means of propagation has been with grafts. However, progress has been made recently with cuttings. Dr. Thomas and Mr. Patton have helped with various phases of this work. More or less parallel work has been done by Dr. Hirt, at Syracuse, N. Y., and by Dr. Heimburger, in Canada. The results are in essential agreement.

Poplar trees seem to be assuming more and more importance, particularly in view of the recent developments of the semichemical process for manufacturing paper pulp. Unfortunately, the native trembling and large-toothed aspen are susceptible to hypoxylon canker. The well known hybrid poplars, when grown in Wisconsin, have been

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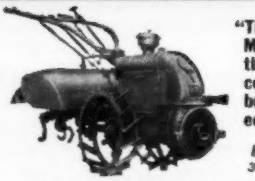

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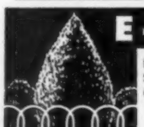

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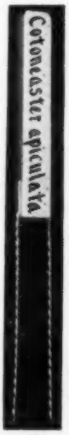
attacked more or less severely by cytospora canker, with an occasional septoria canker.

The ease with which these poplars are crossed is surprising, in view of the difficulty usually associated with tree breeding. Branches about five feet long with flower buds are cut in February or March from both male and female trees, respectively. The lower ends are placed in a jar of water in a room where the air is between 50 and 70 degrees Fahrenheit and is reasonably humid. The staminate catkins come out in a few weeks and shed pollen. This is collected and dusted on the pistillate catkins. In about two weeks they develop seeds, which germinate promptly. Because new seedlings damp off easily, much care is necessary to avoid this disease. Dr. Kuntz and I have some seedlings six feet tall from such seeds developed last spring.

Within reason we have hopes of combining the good qualities of the various poplar species and of getting rid of their bad qualities. Thus, we have great hopes, with time, of being able to provide poplar trees according to what you want, including easy vegetative propagation.

While breeding some forest trees may involve some extremely difficult problems, breeding poplars is easy



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and rapid. The possibility of rooting cuttings is a further advantage.

In conclusion, then, great possibilities appear for developing trees that not only are resistant to many of the important tree diseases, but also have other desirable characteristics. Although only a few men are working on these problems, substantial progress has already been made. Both for plantings in parks and for reforestation programs, improvements in the qualities of the trees hold much promise for the future.

MORE DAMAGE REPORTED FROM SOUTH AND EAST.

[Concluded from page 8.]

viewed in that region would hazard an estimate, as damage cannot be checked for some time, but nurserymen stated they will lose large sums through loss of growth, or the killing back of the upper parts of plants, thus losing size and salability.

At the request of the garden editor of a local newspaper, R. P. Mayo, of Mayo Nurseries, Augusta, Ga., wrote an article telling homeowners what to do for plants following the freeze and giving precautions for the future.

Storm damage in the east from the recent hurricane brought more news of damage to nursery crops. And landscape nurserymen have been busy looking over customers' properties, estimating damages for replacement and income tax deductions. Crews have weeks of work ahead in straightening up evergreens and other plants bent over by high winds.

It was reported that two greenhouses owned by Musser Forests, Inc., Indiana, Pa., collapsed under the weight of the heavy snow.

HARDY plants and pot plants will be sold by M. L. Mayton, at Blackstone, Va., who has changed his business name from Mayton's Nursery to Mayton's Plant Gardens.

LOCATED in Ohio for many years, Maynard U. Cram now operates Hillendale Nurseries, 2721 Mayflower road, Charlotte, N. C., where he specializes in trees, shrubs, bulbs and perennials.

SALE of the Continental Nurseries, Franklin, Mass., by W. J. Van Leeuwen to Albert Lesco, Linwood, Mass., was completed recently. The nurseries, in operation for forty-eight years, now are under the direction of Mr. and Mrs. E. Bechard, Linwood, son-in-law and daughter of Mr. Lesco.

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RETINOSPORA PLUMOSA.		
Plumosa Aurea.		
24 to 30 ins., B&B	2.10	2.00
30 to 36 ins., B&B	2.60	2.50

All items can be certified for western shipment.

**All Evergreens B&B at List Prices.
NO BOXING**

**Deliveries by full truck and carload only—or call for your own stock.
(Prices subject to change without notice.)**

Bringing to your attention an aerial view of our home farm. Write for booklet of 48 individual photographs of different blocks snapped last summer.

FRENCH HYBRID LILACS

These French Lilacs are all two-year field grafts—cut back at the end of the first year, and developed into lightly branched, quick-maturing, lining-out plants. This collection has been carefully selected from among the oldest and newest varieties to give you a comprehensive range of colors in plants known to grow well under most conditions.

S signifies single. D signifies double.

BERRYER. D, mauve
  xx, fld, 2 to 2½ ft.
CHAS. JOLY. D, crimson
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 2½ ft.
CONGO. S, wine-red
  xx, fld, 10 to 12 ins.
  xx, fld, 12 to 18 ins.
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 2½ ft.
DECAISNE. S, azure
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 2½ ft.
GENERAL SHERIDAN. D, white
  xx, fld, 2 to 2½ ft.
KATE HARLIN. S, white
  xx, fld, 12 to 18 ins.
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 2½ ft.
LAMARTINE. S, Wedgwood blue
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 2½ ft.
MME. ABEL CHATENAY. D, white
  xx, fld, 12 to 18 ins.
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 2½ ft.
MME. FLORENT STEPMAN. S, white
  xx, fld, 10 to 12 ins.
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 2½ ft.
MME. LEMOINE. D, white
  xx, fld, 10 to 12 ins.
  xx, fld, 2 to 2½ ft.
MARECHAL LANNES. D, violet-blue
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 2½ ft.
MISS ELLEN WILLMOTT. D, white
  xx, fld, 12 to 18 ins.
  xx, fld, 2 to 2½ ft.
PRES. CARNOT. D, rosy-lavender
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 2½ ft.
PRES. GREVY. D, soft blue
  xx, fld, 10 to 12 ins.
  xx, fld, 12 to 18 ins.
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 2½ ft.
PRES. LINCOLN. S, wedgwood blue
  xx, fld, 10 to 12 ins.
  xx, fld, 12 to 18 ins.
  xx, fld, 2 to 2½ ft.
SOUVENIR DE LUDWIG SPAETH. S, red
  xx, fld, 10 to 12 ins.
  xx, fld, 12 to 18 ins.
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 2½ ft.
THOMAS JEFFERSON. S, violet
  xx, fld, 2 to 2½ ft.
THUNBERG. D, mauve
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 2½ ft.
TOURNEFORT. D, bright mauve
  xx, fld, 2 to 2½ ft.

SOLD IN MULTIPLES OF 10 ONLY

	Each
10 to 12 ins.	**$0.35**
12 to 18 ins.	**.39**
18 to 24 ins.	**.44**
2 to 2½ ft.	**.50**

FLOWERING CRAB APPLES

ADSTRINGENS. deep rose
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 3 ft.
  xx, fld, 3 to 4 ft.

DOLGO. white
  xx, fld, 12 to 18 ins.

FLORIBUNDA ATROSANGUINEA. pink
  xx, fld, 12 to 18 ins.
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 3 ft.
FLORIBUNDA PURPUREA. red
  xx, fld, 12 to 18 ins.
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 3 ft.
  xx, fld, 3 to 4 ft.
PURPUREA ALDENHAMENSIS. red
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 3 ft.
PURPUREA ELEYI. red
  xx, fld, 12 to 18 ins.
  xx, fld, 18 to 24 ins.
  xx, fld, 3 to 4 ft.
SCHEIDECKERI. rose
  xx, fld, 12 to 18 ins.
  xx, fld, 18 to 24 ins.

ZUMI CALOCARPA. white
  xx, fld, 12 to 18 ins.
  xx, fld, 18 to 24 ins.
  xx, fld, 2 to 3 ft.
  xx, fld, 3 to 4 ft.

SOLD IN MULTIPLES OF 10 ONLY

	Each
12 to 18 ins.	**$0.40**
18 to 24 ins.	**.44**
2 to 3 ft.	**.50**
3 to 4 ft.	**.55**

D. HILL NURSERY COMPANY

Evergreen Specialists :-: *Largest Growers In America*

DUNDEE, ILLINOIS